

European Topic Centre on Air Emissions

CORINAIR 1994 INVENTORY

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Note

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PREFACE

CORINAIR 94 (COReINventory AIR) is the air emission inventory for Europe for 1994. The CORINAIR project is part of the work programme of the European Environment Agency (EEA). The European Topic Centre on Air Emissions (ETC/AE) is designated by the EEA to develop the CORINAIR project by assisting participating countries, in particular National Experts in the National Reference Centres (NRCs), to report their national 1994 emission estimates as required under various international obligations. To complement these reports, the ETC/AE prepares the CORINAIR 1994 air emission inventory and database.

In 1995 the ETC/AE developed the CORINAIR 94 methodology and software, which were made available to the 18 EEA member countries and other interested countries (e.g. Switzerland, Malta) in January 1996 and to 13 Central and Eastern European countries in June 1996. Based on the submitted emission estimates from the NRCs, using the CORINAIR methodology and software, the ETC/AE presented preliminary estimates in July 1996. It is important to note that this report presents the updated and supplemented emissions estimates, as delivered by twenty countries to ETC/AE before 1 April 1997. ETC/AE received emissions estimates for 1994 after this date, but these will be included in subsequent reports and will be made available progressively via the ETC/AE and EEA Internet sites:

<http://www.aeat.co.uk/products/centres/netcen/corinair/94/corin94.html> <http://www.eea.eu.int>

The countries were requested to report emissions of the following pollutants (see appendix B for full definitions):

- pollutants contributing to acidification, eutrophication and climate change : S_2O , NO_x , NH_3 , NMVOC, CH_4 , CO, N_2O , CO_2 ;
- other pollutants : nine heavy metals (HMs) and ten persistent organic pollutants (POPs).

This report presents a summary of 1994 emission estimates according to UNECE/EMEP Guidelines for reporting under the Convention on Long Range Transboundary Air Pollution (LRTAP) (“Emission tables derived from CORINAIR in UNECE/EMEP format”).

It is also possible to derive emission estimates from CORINAIR in line with the IPCC Guidelines for National Greenhouse Gas Inventories (1995) under the UN Framework Convention on Climate Change, which are similar to the requirements under the EU Decision on a Monitoring Mechanism for CO_2 and other greenhouse gases. These are however not presented in this report. Such emission estimates in UNFCCC/IPCC format are available elsewhere (e.g. the second national communications to UNFCCC due 15 April 1997).

Finally detailed CORINAIR 94 emission estimates on the level of 77 subsectors (SNAP level 2 = Selected Nomenclature for sources of Air Pollution) are not reported here, but are available via the ETC/AE or the EEA Internet site. The most detailed CORINAIR emission data (approximately 375 SNAP level 3 emission generating activities and the emission estimates of point sources) are not presented here, because these data are too detailed for this summary report. However these data form an essential part of the CORINAIR methodology, together with the use of energy balances for each country, to enable the NRCs and/or the ETC/AE to prepare the emission estimates on a higher aggregated level as required under international obligations (EMEP, IPCC). The full emission database will be made available progressively via the ETC/AE and the EEA Internet sites.

There still remain some differences and inconsistencies between the “UNECE/EMEP and IPCC emission estimates as derived from CORINAIR” and the corresponding emission estimates in some of the official “national communications” submitted by the countries as Party to the relevant Convention

(UNECE, UNFCCC) . Therefore care should be taken using the estimates in this report. Inconsistencies have been removed as far as possible. The remaining inconsistencies are being further analysed and explained by ETC/AE in co-operation with the national experts to improve the CORINAIR94 inventory and provide a complete, consistent and transparent database of objective, reliable and comparable emission estimates.

In this report emissions are described by pollutants, by main source sectors, by countries and by contribution to the environmental themes “climate change” and “acidification”.

Chapter 1 gives a country-by country comparison of national total emissions by pollutant and an overview according to main source sectors. Furthermore pollutants and source sectors responsible for climate change and acidification are presented. All national total emissions follow the UNECE/EMEP guidelines. However, the sector *“agriculture”* (SNAP sector 11) is excluded for all pollutants to ensure consistent inter country comparison. Additionally, sector *“agriculture and forestry, land use and wood stock change”* (SNAP sector 10) is excluded for NMVOC and CO₂ for the same reason.

Chapter 2 presents the UNECE/EMEP emission tables (“Derived from CORINAIR”) showing emissions by country and by main source sector (11 UNECE source sectors) and the emissions per capita.

In comparison with CORINAIR 90, the CORINAIR 94 methodology has been further developed :

- to include additional source sectors and sub-sectors relevant to the additional pollutants included in CORINAIR90.
- to be as far as practicable consistent with international energy statistics and the IPCC guidelines for national greenhouse gas inventories.

The detailed SNAP94 list of emission generating activities is presented in appendix C. The complete correspondence between SNAP90, SNAP94 and IPCC source sectors is explained in detail in the joint EMEP/CORINAIR Atmospheric Emission Inventory Guidebook (1996) (available on CD-ROM since April 1997). Because of (relatively small) differences between SNAP90 and SNAP94, emission estimates on the level of source (sub)sectors of CORINAIR 94 are not fully comparable with those published to date for CORINAIR 90. The ETC/AE is therefore currently preparing updated emission inventories for 1990 and for intermediate years (1991, 1992, 1993) in the CORINAIR 94 format in close co-operation with the NRCS. Despite these differences it is presently possible to provide a general indicative trend in the national total emissions of 1990 and 1994.

The results of CORINAIR 94 provide the most detailed, complete, consistent and transparent European atmospheric emission inventory to date. Nevertheless results are estimates of actual emissions with significant uncertainties in some cases. Furthermore some gaps and inconsistencies remain. Comments and observations on the results presented in this report are welcome to assist in the longer term development of the methodology into an annual European air emission inventory to provide the basis for consistent reporting and assessment under various international commitments and activities.

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1. SUMMARY

1.1 National Total Emissions 1994

In 1996 twenty European countries took part in the CORINAIR 94 inventory. These are the EU15 countries plus two additional members of the European Environment Agency (Norway and Iceland) as well as Croatia, Malta and Switzerland. All these countries delivered data for the pollutants already investigated in the previous inventory (CORINAIR 90), see table 1.1. The national total emissions in table 1.1 follow the UNECE/EMEP² guidelines but are presented on a comparable basis. This means that for all countries all emissions from *nature (SNAP sector 11)* and for NMVOC and CO₂ additionally emissions from *agriculture and forestry, land use and wood stock change (SNAP sector 10)* have been excluded in the tables in this chapter. The national total emissions including all SNAP10 and SNAP 11 emissions are reported separately on the ETC/AE Internet site (<http://www.aeat.co.uk/products/centres/netcen/corinair/94/corin94.html>).

Only a few countries delivered data for additional pollutants under CORINAIR 94 (see table 1.2 and 1.3). In table 1.4, per capita emissions for these additional pollutants, are presented.

CORINAIR defines sources of air emissions according to *Selected Nomenclature for sources of Air Pollution (SNAP)*. These 375 detailed sources („SNAP level 3“) can be aggregated to 77 source subsectors on SNAP level 2. These 77 source subsectors can be further aggregated to the 11 main source sectors used as basis for chapter 2. To reach full consistency between UNECE/EMEP and UNFCCC³/IPCC⁴ reporting formats, emission data on SNAP level 3 are necessary. The ‘status’ column in table 1.1-1.3 indicates the level of emission detail submitted by the countries to the *European Topic Centre on Air Emissions* (ETC/AE). For a full status report and country related footnotes see appendix A.

The emission estimates of heavy metals (HMs) and persistent organic pollutants (POPs) (tables 1.2 and 1.3) are generally more uncertain than for the conventional pollutants (table 1.1), because the estimation methodologies are less developed. In addition, there might be differences in the species and sources included in the estimates from the various countries. This means that the figures in the tables are not necessarily comparable between countries. Especially the per capita emissions for heavy metals (HM) and (POP) are not representative for Europe as a whole but indicate mean values for the countries which delivered data within CORINAIR 94.

¹ United Nations Economic Commission for Europe

² Executive Body to the Co-operative Programme for Monitoring and Evaluating Transmission of Air Pollutants in Europe

³ United Nations Framework Convention on Climate Change

⁴ International Panel on Climate Change

Table 1.1: National total emissions 1994

COUNTRY	Popu- lation (Mio)	SO ₂ (Mg)	NO _x (Mg)	NMVOC (Mg)	CH ₄ (Mg)	CO (Mg)	CO ₂ (Gg)	N ₂ O (Mg)	NH ₃ (Mg)	Status
	1994	1994	1994	1994	1994	1994	1994	1994	1994	
Germany	81,1	2 998 358	2 266 460	2 145 256	4 848 457	6 797 275	904 316	218 485	622 518	B
United Kingdom	58,2	2 696 573	2 387 096	2 350 651	3 847 962	5 967 328	549 872	99 504	320 000	A
France	57,7	1 013 222	1 682 117	2 307 951	2 841 539	9 602 337	340 976	196 487	666 816	A
Italy	57,0	1 436 554	2 157 285	2 238 540	4 131 655	9 226 465	427 024	130 936	388 948	C
Spain	39,1	2 060 904	1 223 282	1 120 068	2 309 407	4 801 223	246 673	88 314	344 469	C
Netherlands	15,3	146 000	529 788	378 099	1 077 608	907 806	163 436	45 850	172 000	B
Greece	10,4	556 272	356 775	361 923	448 633	1 288 632	87 811	14 729	445 198	A
Belgium	10,1	279 190	374 095	337 432	420 684	1 166 097	113 628	27 044	78 865	A
Portugal	9,9	272 999	248 976	225 497	252 881	1 195 167	51 079	38 364	92 634	C
Sweden	8,7	74 163	444 119	381 419	273 542	1 318 448	86 741	23 614	50 574	A
Austria	8,0	54 870	170 838	289 644	574 963	1 180 548	59 680	12 654	86 248	A
Denmark	5,2	158 004	275 800	154 437	430 640	715 402	62 846	12 200	93 566	A
Finland	5,1	110 600	287 900	177 100	237 100	438 000	79 000	16 400	41 000	C
Ireland	3,6	176 713	117 348	93 109	807 761	333 056	33 413	25 985	124 598	A
Luxembourg	0,4	12 828	22 556	17 651	21 909	145 207	9 484	689	7 119	A
EU-15	370	12 047 250	12 544 435	12 578 777	22 524 740	45 082 991	3 215 980	951 254	3 534 553	
Switzerland	6,7	30 730	139 887	217 662	315 597	549 059	43 113	17 476	60 160	A
Norway	4,2	34 123	218 433	364 504	466 671	863 065	37 413	14 180	24 801	A
Malta	0,4	15 798	16 297	5 506	9 410	23 708	2 395	13 007	6 370	A
Iceland	0,3	7 986	22 193	7 126	21 386	25 377	2 182	493	0	A
Liechtenstein	0,03	-	-	-	-	-	-	-	-	-
Poland	38,4	-	-	-	-	-	-	-	-	-
Romania	23,3	-	-	-	-	-	-	-	-	-
Hungary	10,5	-	-	-	-	-	-	-	-	-
Czech Republic	10,3	-	-	-	-	-	-	-	-	-
Bulgaria	9,0	-	-	-	-	-	-	-	-	-
Slovakia	5,3	-	-	-	-	-	-	-	-	-
Croatia	4,7	89 226	58 554	72 529	137 929	465 960	17 506	14 903	23 953	C
Lithuania	3,8	-	-	-	-	-	-	-	-	-
Latvia	2,7	-	-	-	-	-	-	-	-	-
Slovenia	2,0	-	-	-	-	-	-	-	-	-
Estonia	1,6	-	-	-	-	-	-	-	-	-
Total	493	12 225 113	12 999 799	13 246 104	23 475 733	47 010 160	3 318 589	1 011 314	3 649 837	

Legend: Emission Status

- A ... emission estimates on SNAP level 3 (fully detailed)
- B ... emission estimates on SNAP level 2 (detailed)
- C ... emission estimates on SNAP level 1 (main source sectors)

⁵ National total emissions follow the UNECE/EMEP guidelines. However, emissions from sector "Agriculture and forestry, land use and wood stock change" (SNAP 10) are excluded for NMVOC and CO₂ national total for the same reason. The national total emissions including all SNAP10 and SNAP 11 emissions are reported on the ETC/AE Internet site.

Table 1.2: National total emissions 1994 (heavy metals)

COUNTRY	As	Cd	Cr	Cu	Hg	Ni	Pb	Se	Zn	Status
Emissions in kg										
Germany	32 456	10 683	115 067	79 051	31 072	157 436	624 995	25 182	451 236	B
United Kingdom	111 692	23 532	63 287	79 235	19 537	467 232	1 754 831	99 265	1 308 480	A
France	-	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	-	-	-	-	-
Spain	-	-	-	-	-	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-	-	-	-
Greece	-	-	-	-	-	-	-	-	-	-
Belgium	-	-	-	-	-	-	-	-	-	-
Portugal	-	-	-	-	-	-	-	-	-	-
Sweden	-	-	-	-	-	-	-	-	-	-
Austria	3 263	2 715	6 624	9 235	2 177	35 533	24 288	4 707	208 287	B
Denmark	742	1 185	3 486	10 561	7 584	22 064	39 530	132	118 288	C
Finland	-	-	-	-	-	-	-	-	-	-
Ireland	-	-	-	-	-	-	-	-	-	-
Luxembourg	3 497	531	2 973	3 494	245	2 808	43 894	7 216	151 459	C
EU (5)	151 651	38 647	191 436	181 576	60 614	685 074	2 487 539	136 503	2 237 749	
Switzerland	-	2 718	-	-	3 977	-	286 758	-	674 265	B
Norway	94	596	12 010	9 451	824	40 282	29 167	-	108 086	A
Malta	-	-	-	-	-	-	-	-	-	-
Iceland	-	-	-	-	-	-	-	-	-	-
Liechtenstein	-	-	-	-	-	-	-	-	-	-
Poland	-	-	-	-	-	-	-	-	-	-
Romania	-	-	-	-	-	-	-	-	-	-
Hungary	-	-	-	-	-	-	-	-	-	-
Czech Republic	-	-	-	-	-	-	-	-	-	-
Bulgaria	-	-	-	-	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-	-	-	-	-
Croatia	-	-	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-
Latvia	-	-	-	-	-	-	-	-	-	-
Slovenia	-	-	-	-	-	-	-	-	-	-
Estonia	-	-	-	-	-	-	-	-	-	-
Total	151 744	41 961	203 446	191 027	65 414	725 356	2 803 464	136 503	3 020 100	

⁶ National total excludes emissions from sector „nature“ (SNAP 11) to insure inter country comparison,
Legend: see table 1.1, pollutants definition see appendix B

Table 1.3: National total emissions 1994 (persistent organic pollutants - POP)

COUNTRY	PAH Mg	DIOX g I-TEQ	PCP Mg	HCB Mg	TCM Mg	TRI Mg	PER Mg	TCB Mg	TCE Mg	HCH Mg	Status
Germany	420	307	-	0,09	-	11 000	11 700	-	30 300	-	B
United Kingdom	764	793	555	1,2	3 191	20 349	11 287	629	24 739	114	A
France	-	-	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	-	-	-	-	-	-
Spain	-	-	-	-	-	-	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-	-	-	-	-
Greece	-	-	-	-	-	-	-	-	-	-	-
Belgium	-	-	-	-	-	-	-	-	-	-	-
Portugal	-	-	-	-	-	-	-	-	-	-	-
Sweden	-	-	-	-	-	-	-	-	-	-	-
Austria	458	29	-	-	-	-	-	-	-	-	B
Denmark	37	14	-	-	0,3	477,8	354,4	-	10,0	9,2	B
Finland	-	-	-	-	-	-	-	-	-	-	-
Ireland	-	-	-	-	-	-	-	-	-	-	-
Luxembourg	1,1	22	-	-	-	-	-	-	-	-	B
EU (5)	1 679	1 165	555	1,3	3 191	31 827	23 342	629	55 049	123	
Switzerland	-	192	-	-	-	-	-	-	-	-	B
Norway	181	144	0,1	0,1	0,9	468,7	376,0	0,04	106,0	0,0	A
Malta	-	-	-	-	-	-	-	-	-	-	-
Iceland	-	-	-	-	-	-	-	-	-	-	-
Liechtenstein	-	-	-	-	-	-	-	-	-	-	-
Poland	-	-	-	-	-	-	-	-	-	-	-
Romania	-	-	-	-	-	-	-	-	-	-	-
Hungary	-	-	-	-	-	-	-	-	-	-	-
Czech Republic	-	-	-	-	-	-	-	-	-	-	-
Bulgaria	-	-	-	-	-	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-	-	-	-	-	-
Croatia	-	-	-	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-	-
Latvia	-	-	-	-	-	-	-	-	-	-	-
Slovenia	-	-	-	-	-	-	-	-	-	-	-
Estonia	-	-	-	-	-	-	-	-	-	-	-
Total	1 860	1 501	555	1,5	3 192	32 295	23 718	629	55 155	123	

Legend: see table 1.1, for definition of pollutants see appendix B

Table 1.4: EU-15 per capita emissions 1994⁷

pollutant	SO ₂	NO _x	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃		
per capita emissions (kg/capita)*	32	34	34	61	122	9	2,6	9,5		
pollutant	As	Cd	Cr	Cu	Hg	Ni	Pb	Se	Zn	
per capita emissions (g/capita)	926	256	1 242	1 166	399	4 428	17 115	833	18 438	
pollutant	PAH	DIOX	PCP	HCB	TCM	TRI	PER	TCB	TCE	HCH
	(kg/capita)	(ng/capita)								
	11,84	9,16	8,89	0,01	47,22	217,18	159,50	10,08	370,91	1,82

* = CO₂ in Mg/capita

⁷ National total excludes emissions from sector „nature“ (SNAP 11)

⁸ For heavy metals (HM) and POPs only for those 7 countries that delivered data within CORINAIR94 by April 1997

1.2 Main Source Sectors

According to UNECE / EMEP requirements, sources of emissions to air have to be reported according to 11 main source sectors. The emissions in the EU15 countries from these 11 main source sectors are given in table 1.5. This main sector split for the EU-15 countries derived from CORINAIR 94 clearly show that only a few main sources of air pollution are responsible for a large part of the emissions. The main contributing sources differ for each pollutant (see tables 1.5 - 1.7 and figures 1.1 - 1.3).

Only a few countries submitted emission estimates for Heavy Metals (HM) and Persistent Organic Pollutants (POP), so the relative contributions from these source sector splits are certainly not applicable for Europe as a whole, but can be seen as an initial indication.

Table 1.5: EU-15 emissions by main source sector 1994

Sector	SO ₂ (Mg)	NO _x (Mg)	NM VOC (Mg)	CH ₄ (Mg)	CO (Mg)	CO ₂ (Gg)	N ₂ O (Mg)	NH ₃ (Mg)
1 Combustion in energy and transformation industries	7 300 688	2 400 337	147 860	44 811	562 092	1 036 284	62 825	3 267
2 Non-industrial combustion plants	1 011 629	552 949	548 954	392 446	5 605 390	608 705	28 374	1 319
3 Combustion in manufacturing industry	2 312 346	1 184 710	61 230	49 126	2 635 343	579 837	30 384	1 709
4 Production processes	546 657	215 167	979 289	44 017	2 416 928	141 157	298 534	100 872
5 Extraction and distr. of fossil fuels / geothermal energy	31 402	113 539	841 083	3 666 638	105 063	1 303	13	
6 Solvent and other product use	77	552	3 912 828	23	593	3 651	9 109	1 951
7 Road transport	505 029	6 052 042	5 025 798	164 906	27 989 606	662 725	52 669	32 111
8 Other mobile sources and machinery	259 580	1 892 823	844 456	17 760	3 295 004	117 372	14 289	124
9 Waste treatment and disposal	79 525	96 938	217 281	7 824 009	2 134 170	64 883	9 644	36 014
10 Agriculture and forestry, land use and wood stock change	390	34 479	2 982 351	10 321 341	339 406	-58 812	445 456	3 357 690
11 Nature	2 237 119	19 652	1 339 174	3 451 038	96 688	2 871	368 654	547
EU-15 total¹	12 047 250	12 544 435	12 578 777	22 524 740	45 082 991	3 215 980	951 254	3 534 553

¹ The EU-15 total excludes emissions from sector "agriculture" (SNAP 11). Emissions from sector "agriculture and forestry, land use and wood stock change" (SNAP 10) are additionally excluded for NMVOC and CO₂.

In the following overview for each of the 11 source sectors an indication is given for which pollutants this source sector gives a relatively important contribution to the total emissions of the pollutant :

- *Combustion in Energy and Transformation Industries* (SNAP 01) : SO₂, CO₂, NO_x, N₂O, Ni, Cr, Cd, As, Hg, Cu, Se, PCP, HCB.
- *Non Industrial Combustion* (SNAP 02) : PAHs and Dioxin. However since only two countries delivered emission estimates this split is not representative for Europe. This source sector is also an important emission source for : As, Cu, Cd, Ni, Zn, Hg as well as CO₂, CO, NMVOC, SO₂, NO_x.

- *Combustion in Manufacturing Industry*(SNAP 03) : Ni, As, Cd, Se, Hg, Cr and Dioxin as well as SO₂, NO_x, CO₂ and N₂O.
- *Production Processes*(SNAP 04) : Se, Zn, Pb, Ni, Hg, Cu, Cr, Cd, As and Dioxin as well as N₂O and NMVOC, PCP, HCB, TCB.
- *Extraction and distribution of Fossil Fuels / Geothermal Energy*(SNAP 05) and *Solvent and other product use*(SNAP 06): NMVOC, CH₄, TCM, TRI, PER, TCE.
- *Transport*(SNAP 07 and 08): NO_x, NMVOC, CO, CO₂, Cu, Ni, Pb, Zn, Dioxin.
- *Waste treatment and disposal*(SNAP 09): CH₄, CO, Cd, Hg, Pb, Zn, Dioxin
- *Agriculture and forestry, land use and wood stock change*(SNAP 10): NMVOC, CH₄, N₂O, NH₃

Figure 1.1: EU-15 emissions by main source sector (%) 1994

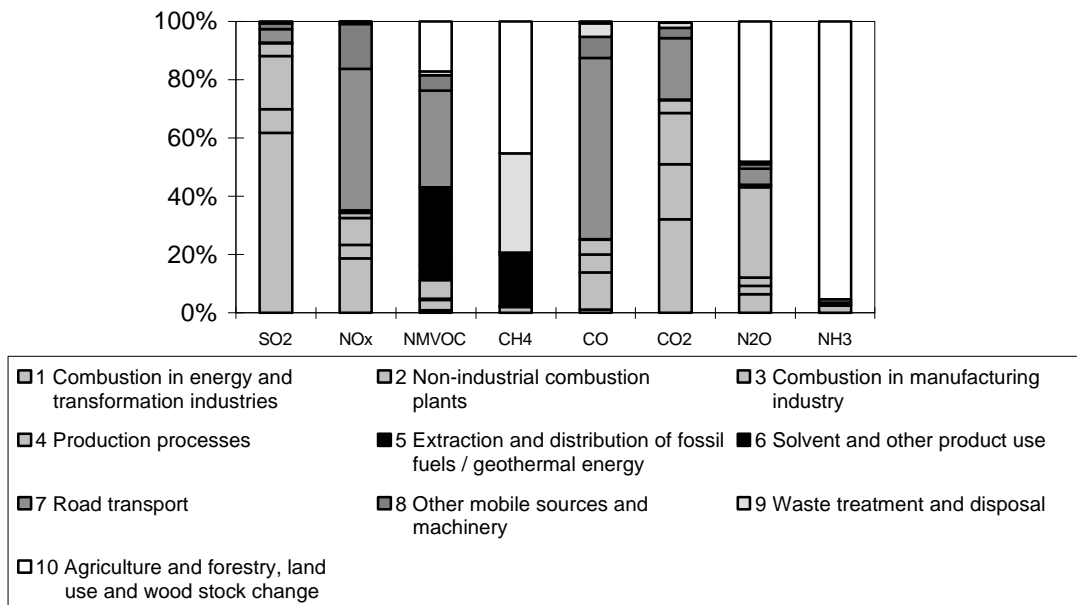
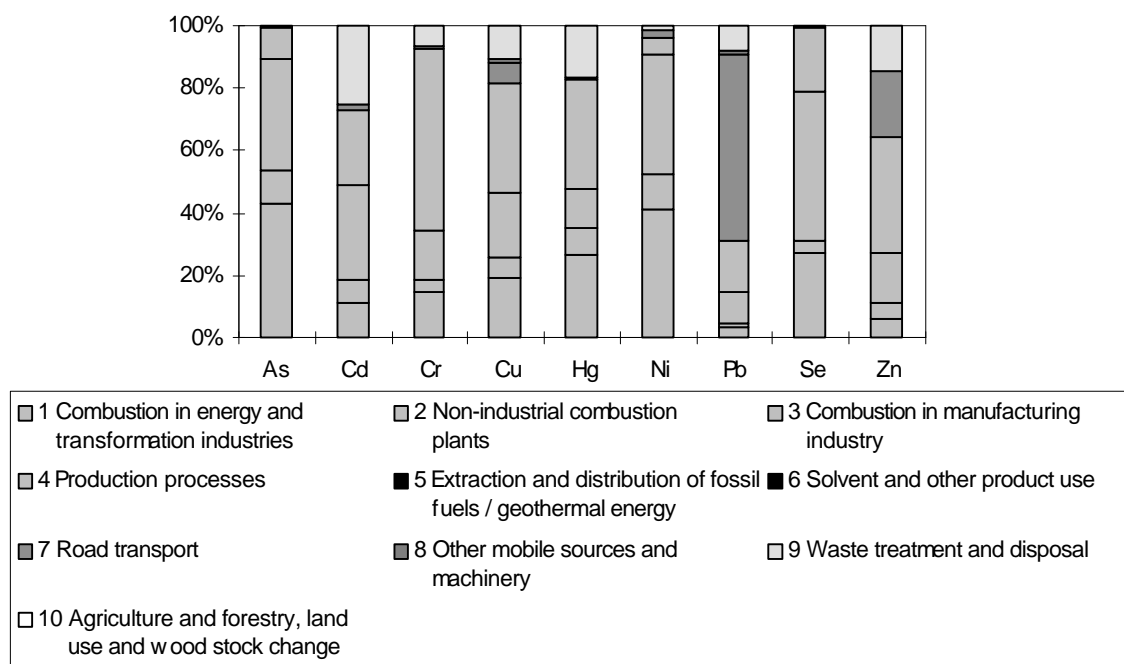


Table 1.6: Emissions by main source sector 1994 (heavy metals)

Sector	As	Cd	Cr	Cu	Hg	Ni	Pb	Se	Zn
Emissions in kg									
1 Combustion in energy and transformation industries	65 347	4 822	29 355	36 992	17 463	296 338	93 586	37 080	170 498
2 Non-industrial combustion plants	16 287	2 960	8 847	11 967	5 655	81 152	43 790	5 090	165 565
3 Combustion in manufacturing industry	54 001	12 889	31 584	40 127	8 239	281 193	268 866	65 419	488 178
4 Production processes	14 939	10 006	119 174	66 418	22 973	37 715	460 838	28 341	1 121 694
5 Extraction and distr. of fossil fuels / geothermal energy	0	0	0	0	0	0	0	0	0
6 Solvent and other product use	0	0	0	0	45	20	0	0	2 500
7 Road transport	14	635	1 245	12 356	12	20 245	1 684 399	395	623 154
8 Other mobile sources and machinery	16	36	100	3 241	14	611	22 372	14	4 263
9 Waste treatment and disposal	1 131	10 605	13 130	19 908	11 010	8 081	229 577	163	443 574
10 Agriculture and forestry, land use and wood stock change	9	8	11	17	3	2	36	0	673
11 Nature	1	1	1	2	0	0	5	0	86
Total (excluding Nature)	151 744	41 961	203 446	191 027	65 414	725 356	2 803 464	136 503	3 020 100

for pollutant definition see appendix B

Figure 1.2: Heavy metal emissions by main source sector (%) 1994



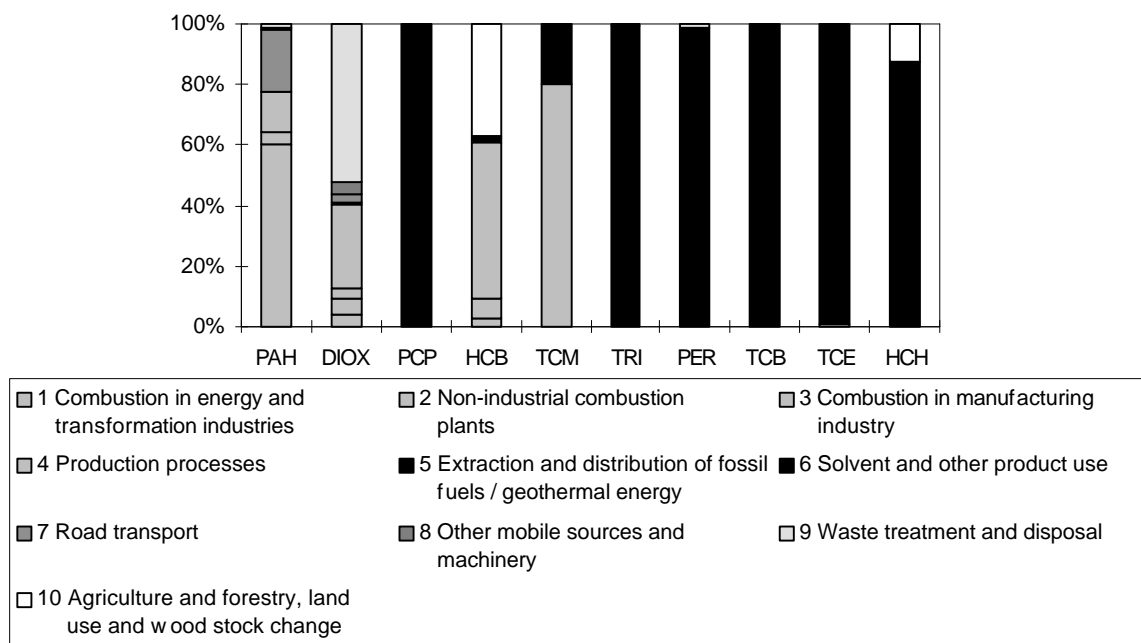
⁹ For those 7 countries that delivered HM and POP data within CORINAIR94 by April 1997

Table 1.7: Emissions by main source sector 1994 (persistent organic pollutants - POP)¹⁰

Sector	PAH's	Dioxin	PCP	HCB	TCM	TRI	PER	TCB	TCE	HCH
	Mg	g I-TEQ	Mg	Mg	Mg	Mg	Mg	Mg	Mg	Mg
1 Combustion in energy and transformation industries	6,1	57,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2 Non-industrial combustion plants	1 120,0	84,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
3 Combustion in manufacturing industry	63,0	51,7	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0
4 Production processes	247,7	414,9	0,0	0,8	2 548,0	11,5	4,9	0,0	296,7	0,0
5 Extraction and distr. of fossil fuels / geothermal energy	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
6 Solvent and other product use	0,0	3,2	554,3	0,0	643,2	32 146,5	23 430,4	629,0	54 716,0	107,1
7 Road transport	382,6	44,7	0,1	0,0	0,0	0,0	0,0	0,0	0,1	0,0
8 Other mobile sources and machinery	10,3	55,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
9 Waste treatment and disposal	29,7	788,5	0,0	0,0	0,6	137,1	282,6	0,0	142,0	0,0
10 Agriculture and forestry, land use and wood stock change	0,8	0,0	0,2	0,5	0,0	0,0	0,0	0,0	0,0	15,8
11 Nature	8,2	6,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Total (excluding Nature)	1 860,1	1 500,6	554,6	1,5	3 191,8	32 295,2	23 717,9	629,0	55 154,9	122,9

for pollutant definition see appendix B

Figure 1.3: Persistent organic pollutants emissions by main source sector (%) 1994



¹⁰ For those 7 countries that delivered HM and POP data within CORINAIR94 by April 1997

1.3 Environmental Themes

This chapter concentrates on pollutants and sectors contributing to climate change and acidification as investigated within the CORINAIR 94 inventory. The greenhouse gases, HFCs, PFCs and SF6 are not yet included in the CORINAIR inventory. This will be done as soon as the IPCC methodology for these gases are officially adopted and published. The revised (1996) IPCC Guidelines were however not yet published in April 1997.

Figures 1.5 - 1.8 show the contributions of pollutants and sectors contributing to climate change and acidification as investigated within the CORINAIR 94 inventory.

The findings show that combustion related sectors (SNAP 01-03, 07-09) are responsible for more than half of the global warming and acidification potential of the pollutants covered by CORINAIR 94. Additionally, the source sector 10 (agriculture) is important for acidification on a European scale.

1.3.1 Climate Change

Figure 1.4: Pollutants responsible for Climate Change EU-15 in 1994 (based on GWP¹ weighted CO₂-equivalent)

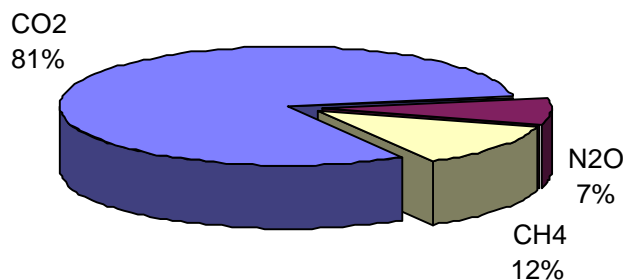
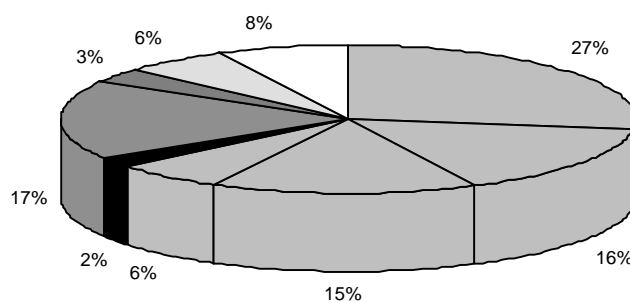


Figure 1.5: Sectors responsible for climate change EU-15 in 1994 (based on GWP¹ weighted CO₂-equivalent)



1 Combustion in energy and transformation industries	2 Non-industrial combustion plants	3 Combustion in manufacturing industry
4 Production processes	5 Extraction and distr. of fossil fuels / geothermal energy	6 Solvent and other product use
7 Road transport	8 Other mobile sources and machinery	9 Waste treatment and disposal
10 Agriculture and forestry, land use and wood stock change		

¹¹ Global Warming Potential: CO₂=1, CH₄=21, N₂O=310. IPCC, Second Assessment Report 1995.

1.3.2 Acidification

Figure 1.6: Pollutants responsible for acidification EU-15 in 1994 (based on acidification equivalents)

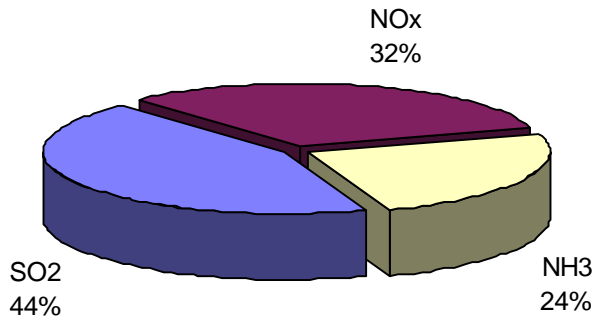
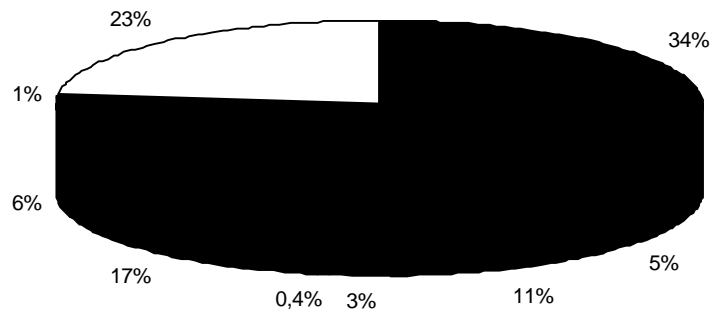


Figure 1.7: Sectors responsible for acidification EU-15 in 1994 (based on acidification equivalents)



■ 1 Combustion in energy and transformation industries	■ 2 Non-industrial combustion plants	■ 3 Combustion in manufacturing industry
■ 4 Production processes	■ 5 Extraction and distr. of fossil fuels / geothermal energy	■ 6 Solvent and other product use
■ 7 Road transport	■ 8 Other mobile sources and machinery	■ 9 Waste treatment and disposal
□ 10 Agriculture and forestry, land use and wood stock change		

¹ weight percentage of Hions, D. Stammers and Ph. Bourdeau (Eds), Europe's Environment, The Dobris Assessment, EEA 1995.

2. EMISSION TABLES IN UNECE/EMEP REPORTING FORMAT

In this chapter the UNECE/EMEP emission tables are presented as “derived from CORINAIR”. For each of the eight pollutants, emissions are given by country and by main source sector (11 UNECE source sectors) and furthermore the emissions per capita are given. Finally the national total emissions (excluding SNAP 11 “nature”) for 1990 and 1994 are compared.

For CO₂ the (1995) IPCC Guidelines are used, which mean that the emissions are “net” ultimate emissions and that emissions from combustion of biomass (fuels and/or waste) are not reported. The CO₂ emissions and “sinks” from “land use and wood stock change” (LUWC) are reported in source sector 10. CO₂ emissions from sector 9 (waste treatment and disposal) includes CO₂ from non-biologic waste. For international sea and air traffic special rules have to be followed, which are explained in the CORINAIR/EMEP Atmospheric Emission Inventory Guidebook and the (1995) IPCC Guidelines.

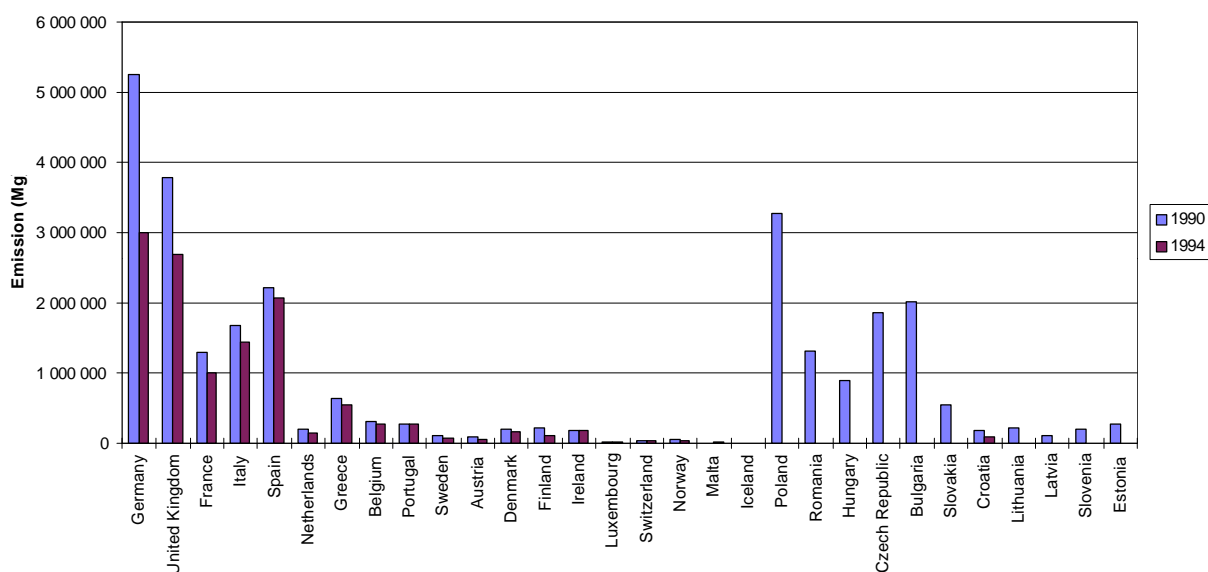
Since the UNECE/EMEP reporting requirements are followed only emissions inside the EMEP area are reported.

The estimation method for national total emissions follows the UNECE/EMEP guidelines. The total emissions are presented on a comparable basis. This means that for all countries all emissions from sector 11 (“nature”) are presented in the tables, but not taken into account in the total. Additionally, emissions of NMVOC and CO from sector 10 (“agriculture and forestry, land use and wood stock change”) are also not taken into account in the total.

For country specific footnotes see appendix A.

2.1 Sulfur Dioxide - SO₂

Figure 2.1.1: Comparison of national total emissions 1990 & 1994



* CORINAIR 94 and CORINAIR 90 are not fully consistent, but emissions estimates of CORINAIR 90 are shown here to provide a general indicative trend.

Figure 2.1.2: National total emissions per capita 1994

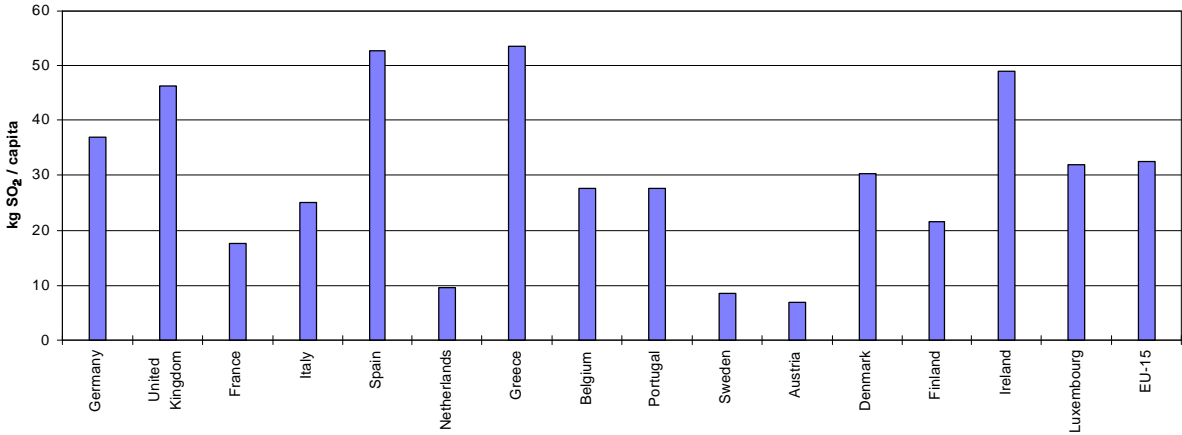
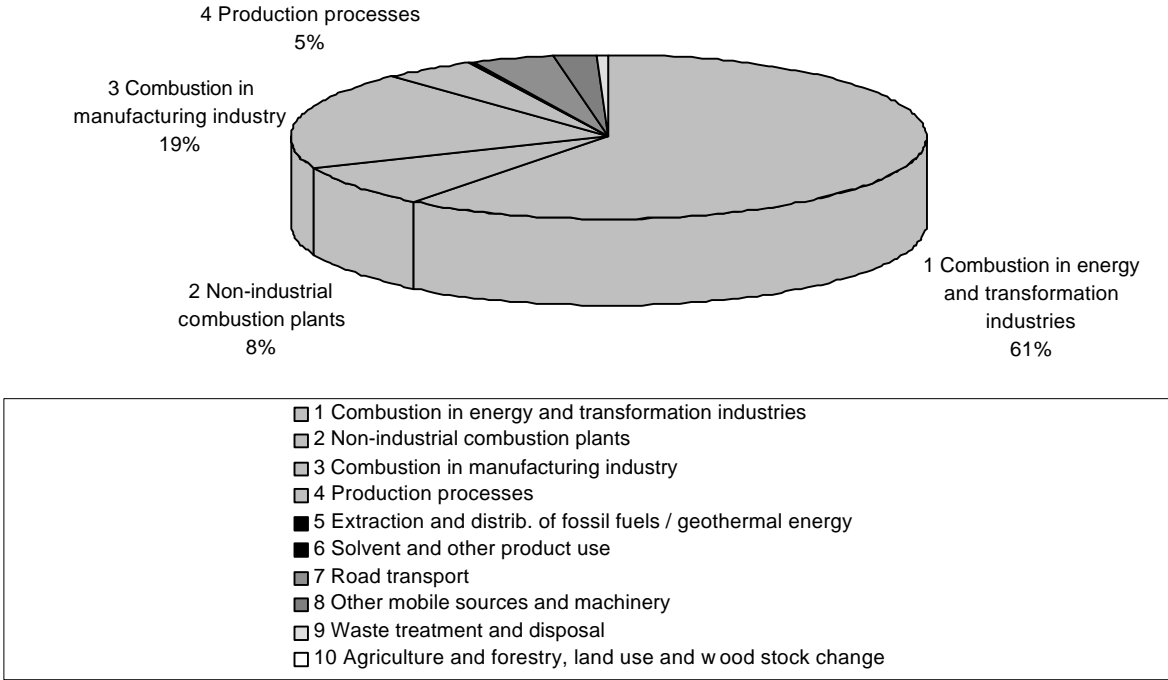


Figure 2.1.3: EU-15 main sector split 1994



Summary Table 1: Sulphur Dioxide

CORINAIR 94 / January 1997

	Germany	United Kingdom	France	Italy	Spain	Netherlands	Greece	Belgium	Portugal	Sweden	Austria	Denmark	Finland	Ireland	Luxembourg	EU-15
Emissions in M g SO₂																
1 Combustion in energy and transformation industries	2 066 305	1 921 304	332 780	742 610	1 287 767	42 262	352 580	128 983	164 540	15 230	4 233	110 783	35 000	96 204	107	7 300 688
2 Non-industrial combustion plants	364 917	171 635	111 379	71 305	76 606	4 746	93 030	39 720	5 465	6 454	18 824	7 393	7 000	31 935	1 220	1 011 629
3 Combustion in manufacturing industry	415 215	375 817	273 047	395 051	482 758	42 000	57 148	54 400	69 341	22 148	11 856	22 369	41 000	39 632	10 564	2 312 346
4 Production processes	67 090	99 215	88 324	98 362	58 715	27 047	12 266	33 012	11 893	14 493	9 106	4 003	23 000	0	131	546 657
5 Extraction and distrib. of fossil fuels / geothermal energy	17 320	1 950	10 453	0	0	398	0	0	0	0	1 280	1	0	0	0	31 402
6 Solvent and other product use	-	-	0	0	0	8	0	0	0	69	0	0	0	0	0	77
7 Road transport	51 087	62 764	154 648	74 887	67 889	12 760	22 543	18 907	18 265	2 350	7 987	1 640	2 200	6 520	582	505 029
8 Other mobile sources and machinery	16 423	48 175	23 814	50 555	55 214	13 917	18 705	344	3 495	11 636	1 526	10 817	2 400	2 422	137	259 580
9 Waste treatment and disposal	-	15 713	18 778	3 784	31 955	2 547	0	3 824	0	1 783	56	998	0	0	87	79 525
10 Agriculture and forestry, land use and wood stock change	-	0	0	0	0	388	0	0	0	0	2	0	0	0	0	390
11 Nature	-	0	832	2 235 347	0	0	940	0	0	0	0	0	0	0	0	2 237 119
Total (excluding Nature)	2 998 358	2 696 573	1 013 222	1 436 554	2 060 904	146 000	556 272	279 190	272 999	74 163	54 870	158 004	110 600	176 713	12 828	12 047 250
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	69	71	33	52	62	29	63	46	60	21	8	70	32	54	1	61
2 Non-industrial combustion plants	12	6	11	5	4	3	17	14	2	9	34	5	6	18	10	8
3 Combustion in manufacturing industry	14	14	27	27	23	29	10	19	25	30	22	14	37	22	82	19
4 Production processes	2	4	9	7	3	19	2	12	4	20	17	3	21	0	1	5
5 Extraction and distrib. of fossil fuels / geothermal energy	1	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0
6 Solvent and other product use	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Road transport	2	2	15	5	3	9	4	7	7	3	15	1	2	4	5	4
8 Other mobile sources and machinery	1	2	2	4	3	10	3	2	1	16	3	7	2	1	1	2
9 Waste treatment and disposal	-	1	2	0	2	2	0	1	0	2	0	1	0	0	1	1
10 Agriculture and forestry, land use and wood stock change	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Nature	-	0	0	156	0	0	0	0	0	0	0	0	0	0	0	19
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Emissions in M g SO₂																
1 Combustion in energy and transformation industries	1 629	1 031	11 987	3	-	-	-	-	-	-	26 584	-	-	-	-	7 341 921
2 Non-industrial combustion plants	13 346	1 601	196	135	-	-	-	-	-	-	9 707	-	-	-	-	1 036 613
3 Combustion in manufacturing industry	6 312	5 091	331	2 384	-	-	-	-	-	-	40 677	-	-	-	-	2 367 141
4 Production processes	4 038	21 428	4	2 644	-	-	-	-	-	-	378	-	-	-	-	575 149
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	31 402
6 Solvent and other product use	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	77
7 Road transport	1 651	2 347	255	263	-	-	-	-	-	-	6 438	-	-	-	-	515 983
8 Other mobile sources and machinery	917	2 624	3 025	2 557	-	-	-	-	-	-	4 362	-	-	-	-	273 065
9 Waste treatment and disposal	2 837	1	0	0	-	-	-	-	-	-	1 081	-	-	-	-	83 444
10 Agriculture and forestry, land use and wood stock change	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	390
11 Nature	50	0	0	0	-	-	-	-	-	-	0	-	-	-	-	2 237 169
Total (excluding Nature)	30 730	34 123	15 798	7 986	-	-	-	-	-	-	89 226	-	-	-	-	12 225 113
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	5	3	76	0	-	-	-	-	-	-	30	-	-	-	-	60
2 Non-industrial combustion plants	43	5	1	2	-	-	-	-	-	-	11	-	-	-	-	8
3 Combustion in manufacturing industry	21	15	2	30	-	-	-	-	-	-	46	-	-	-	-	19
4 Production processes	13	63	0	33	-	-	-	-	-	-	0	-	-	-	-	5
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
6 Solvent and other product use	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
7 Road transport	5	7	2	3	-	-	-	-	-	-	7	-	-	-	-	4
8 Other mobile sources and machinery	3	8	19	32	-	-	-	-	-	-	5	-	-	-	-	2
9 Waste treatment and disposal	9	0	0	0	-	-	-	-	-	-	1	-	-	-	-	1
10 Agriculture and forestry, land use and wood stock change	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
11 Nature	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	18
Total	100	100	100	100	-	-	-	-	-	-	100	-	-	-	-	100

2.2 Nitrogen Oxides -NO_x as NO₂

Figure 2.2.1: Comparison of national total emissions 1990 & 1994

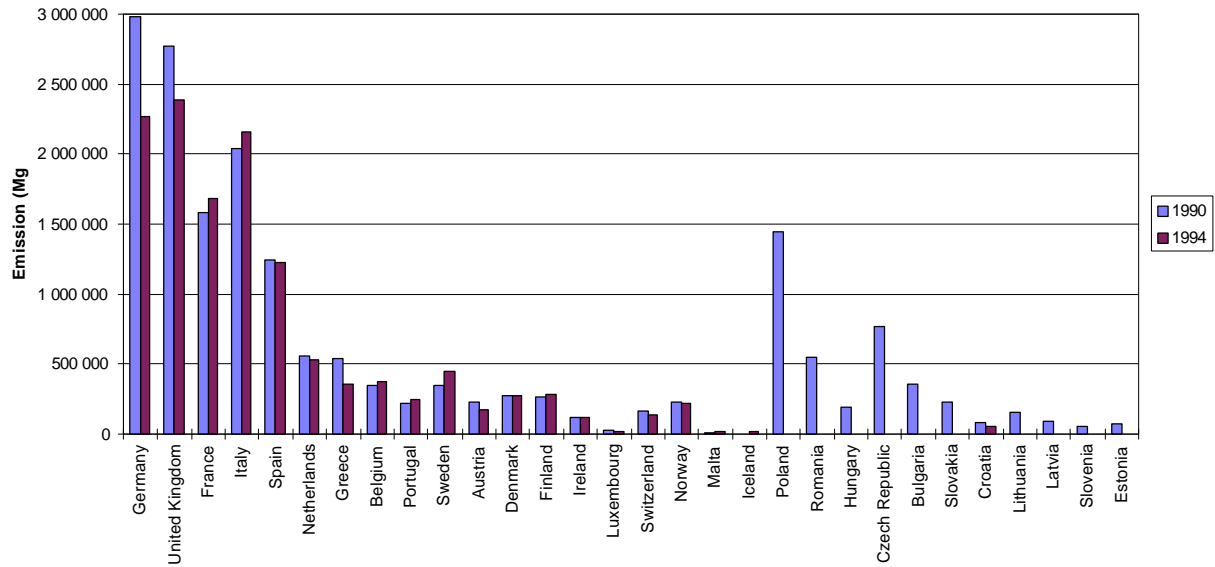
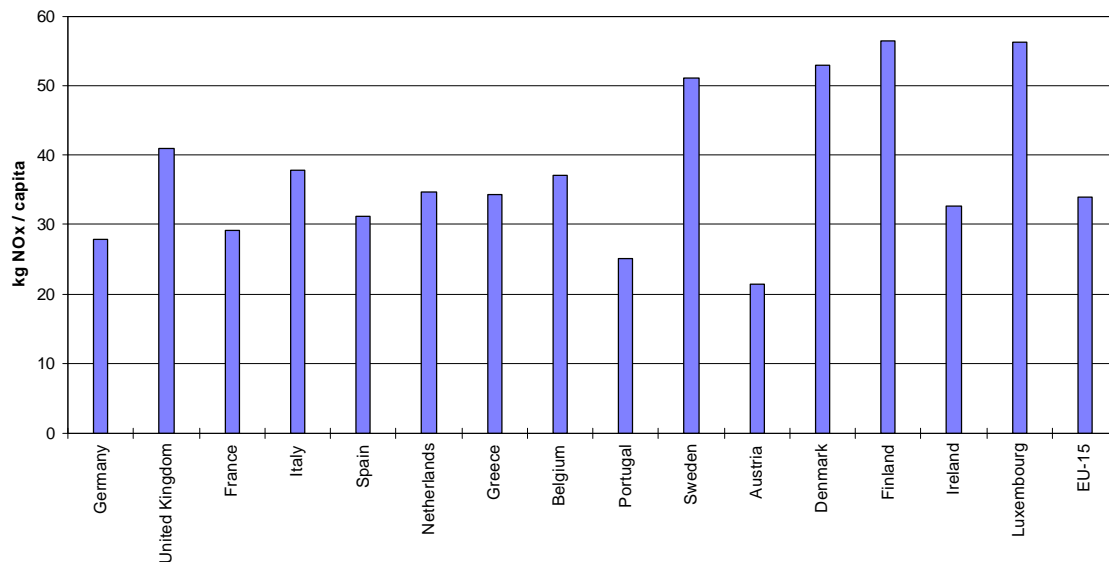
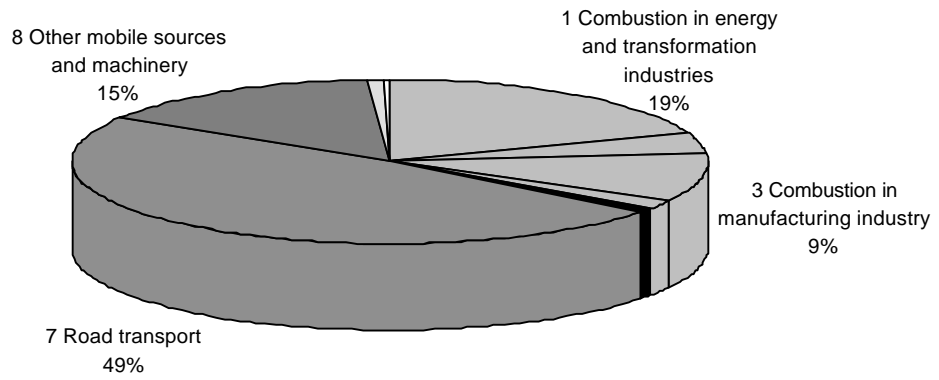


Figure 2.2.2: National total emissions per capita 1994



* CORINAIR 94 and CORINAIR 90 are not fully consistent, but emissions estimates of CORINAIR 90 are shown here to provide a general indicative trend.

Figure 2.2.3: EU-15 main sector split 1994



- 1 Combustion in energy and transformation industries
- 2 Non-industrial combustion plants
- 3 Combustion in manufacturing industry
- 4 Production processes
- 5 Extraction and distrib. of fossil fuels / geothermal energy
- 6 Solvent and other product use
- 7 Road transport
- 8 Other mobile sources and machinery
- 9 Waste treatment and disposal
- 10 Agriculture and forestry, land use and wood stock change

Summary Table 2: Nitrogen Oxides

CORINAIR 94 / January 1997

	Germany	United Kingdom	France	Italy	Spain	Netherlands	Greece	Belgium	Portugal	Sweden	Austria	Denmark	Finland	Ireland	Luxembourg	EU-15
Emissions in Mg Nox																
1 Combustion in energy and transformation industries	507 518	586 405	99 432	446 242	252 702	71 001	77 189	77 077	52 085	21 873	6 591	102 494	54 000	45 470	258	2 400 337
2 Non-industrial combustion plants	139 427	105 428	99 192	58 488	22 333	44 262	3 746	19 172	3 528	9 493	17 281	5 670	16 000	7 953	977	552 949
3 Combustion in manufacturing industry	257 464	153 775	115 665	245 953	168 068	59 612	20 595	52 007	25 570	22 496	12 134	11 845	20 000	9 845	9 681	1 184 710
4 Production processes	22 629	37 822	27 900	10 852	10 377	12 135	34 535	4 379	4 878	12 372	15 848	600	20 400	280	160	215 167
5 Extraction and distrib. of fossil fuels / geothermal energy	-	109 120	0	0	0	618	0	0	0	0	0	3 801	0	0	0	113 539
6 Solvent and other product use	-	-	0	0	0	420	0	0	0	132	0	0	0	0	0	552
7 Road transport	1 045 579	1 138 926	1 018 453	1 056 552	527 743	247 475	128 704	213 684	135 281	166 460	96 148	87 835	135 000	44 233	9 968	6 052 042
8 Other mobile sources and machinery	293 844	245 749	294 725	308 350	225 575	66 890	84 910	3 998	27 634	209 015	15 584	63 320	42 500	9 507	1 222	1 892 823
9 Waste treatment and disposal	-	9 870	26 038	30 367	15 645	6 430	1 707	3 778	0	2 278	240	235	0	60	290	96 938
10 Agriculture and forestry, land use and wood stock change	-	0	712	481	839	20 046	5 389	0	0	0	7 012	0	0	0	0	34 479
11 Nature	-	0	1 859	49	4 402	10 212	1 106	0	1 562	195	267	0	0	0	0	19 652
Total (excluding Nature)	2 266 460	2 387 096	1 682 117	2 157 285	1 223 282	529 788	356 775	374 095	248 976	444 119	170 838	275 800	287 900	117 348	22 556	12 544 435
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	22	25	6	21	21	13	22	21	21	5	4	37	19	39	1	19
2 Non-industrial combustion plants	6	4	6	3	1	8	1	5	1	2	10	2	6	7	4	4
3 Combustion in manufacturing industry	11	6	7	11	7	11	6	14	10	5	7	4	7	8	43	9
4 Production processes	1	2	2	1	0	2	10	1	2	3	9	0	7	0	1	2
5 Extraction and distrib. of fossil fuels / geothermal energy	-	5	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6 Solvent and other product use	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Road transport	46	48	61	49	23	47	36	57	54	37	56	32	47	38	44	48
8 Other mobile sources and machinery	13	10	18	14	10	13	24	1	11	47	9	23	15	8	5	15
9 Waste treatment and disposal	-	0	2	1	1	1	0	1	0	1	0	0	0	0	1	1
10 Agriculture and forestry, land use and wood stock change	-	0	0	0	0	4	2	0	0	0	4	0	0	0	0	0
11 Nature	-	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Switzerland	Norway	Malta	Iceland	Poland	Romania	Hungary	Czech Republic	Bulgaria	Slovakia	Croatia	Lithuania	Latvia	Slovenia	Estonia	Total
Emissions in Mg Nox																
1 Combustion in energy and transformation industries	1 531	26 164	6 667	69	-	-	-	-	-	-	5 513	-	-	-	-	2 440 281
2 Non-industrial combustion plants	13 560	2 689	90	42	-	-	-	-	-	-	3 009	-	-	-	-	572 339
3 Combustion in manufacturing industry	11 726	9 491	116	537	-	-	-	-	-	-	12 153	-	-	-	-	1 218 734
4 Production processes	384	8 589	12	18	-	-	-	-	-	-	1 112	-	-	-	-	225 281
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	113 539
6 Solvent and other product use	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	552
7 Road transport	79 721	74 427	3 544	2 786	-	-	-	-	-	-	23 966	-	-	-	-	6 236 486
8 Other mobile sources and machinery	24 047	91 935	5 868	18 683	-	-	-	-	-	-	12 624	-	-	-	-	2 045 980
9 Waste treatment and disposal	6 376	5 138	0	58	-	-	-	-	-	-	176	-	-	-	-	108 686
10 Agriculture and forestry, land use and wood stock change	2 542	0	0	0	-	-	-	-	-	-	0	-	-	-	-	37 021
11 Nature	2 767	0	0	0	-	-	-	-	-	-	17	-	-	-	-	22 436
Total (excluding Nature)	139 887	218 433	16 297	22 193	-	-	-	-	-	-	58 554	-	-	-	-	12 999 799
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	1	12	41	0	-	-	-	-	-	-	9	-	-	-	-	19
2 Non-industrial combustion plants	10	1	1	0	-	-	-	-	-	-	5	-	-	-	-	4
3 Combustion in manufacturing industry	8	4	1	2	-	-	-	-	-	-	21	-	-	-	-	9
4 Production processes	0	4	0	0	-	-	-	-	-	-	2	-	-	-	-	2
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	1
6 Solvent and other product use	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
7 Road transport	57	34	22	13	-	-	-	-	-	-	41	-	-	-	-	48
8 Other mobile sources and machinery	17	42	36	84	-	-	-	-	-	-	22	-	-	-	-	16
9 Waste treatment and disposal	5	2	0	0	-	-	-	-	-	-	0	-	-	-	-	1
10 Agriculture and forestry, land use and wood stock change	2	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
11 Nature	2	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
Total	100	100	100	100	-	-	-	-	-	-	100	-	-	-	-	100

2.3 Non-Methane Volatile Organic Compounds - NMVOC

The methodology for NMVOC emissions from ‘managed forests’ has been revised in the update from CORINAIR 90 to CORINAIR 94. To ensure comparability, the national total for NMVOC does not include emissions from SNAP 10 (agriculture and forestry, land use and wood stock change) and SNAP 11 (Nature).

Figure 2.3.1: Comparison of national total emissions 1990 & 1994

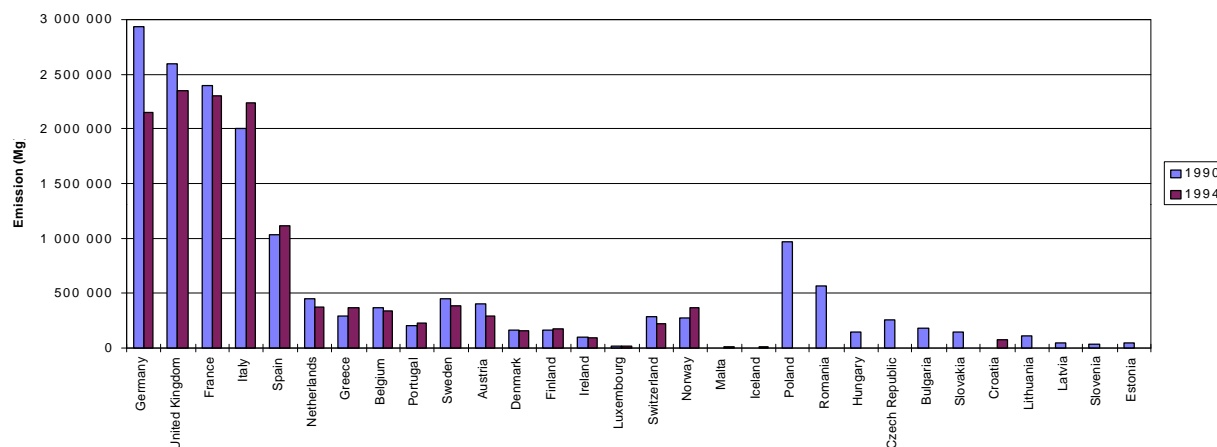
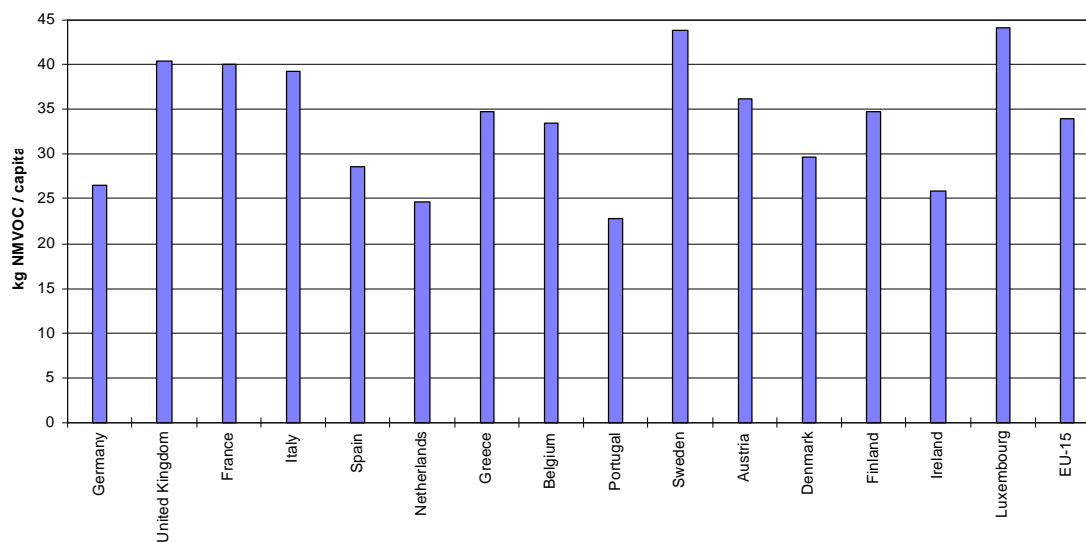
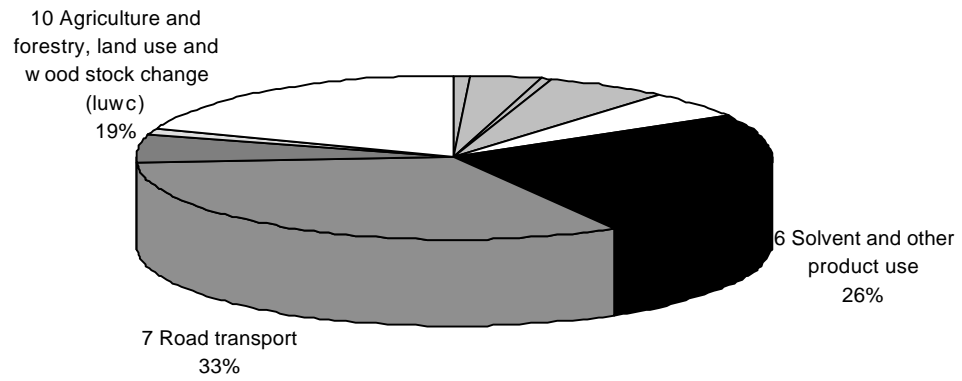


Figure 2.3.2: National total emissions per capita 1994



* CORINAIR 94 and CORINAIR 90 are not fully consistent, but emissions estimates of CORINAIR 90 are shown here to provide a general indicative trend.

Figure 2.3.3: EU-15 main sector split 1994



- 1 Combustion in energy and transformation industries
- 2 Non-industrial combustion plants
- 3 Combustion in manufacturing industry
- 4 Production processes
- 5 Extraction and distrib. of fossil fuels / geothermal energy
- 6 Solvent and other product use
- 7 Road transport
- 8 Other mobile sources and machinery
- 9 Waste treatment and disposal
- 10 Agriculture and forestry, land use and wood stock change (luwc)

Summary Table 3: Non-methane Volatile Organic Compounds

CORINAIR 94 / January 1997

	Germany	United Kingdom	France	Italy	Spain	Netherlands	Greece	Belgium	Portugal	Sweden	Austria	Denmark	Finland	Ireland	Luxembourg	EU-15
Emissions in Mg NMVOC																
1 Combustion in energy and transformation industries	9 015	108 351	1 844	6 520	10 280	1 206	2 336	925	432	4 111	179	1 352	1 000	305	5	147 860
2 Non-industrial combustion plants	59 749	39 200	218 499	23 807	56 845	11 319	358	9 637	10 563	334	61 166	8 226	43 000	5 688	563	548 954
3 Combustion in manufacturing industry	10 754	9 692	5 105	7 213	12 049	1 460	1 392	2 022	3 694	4 485	1 096	771	1 000	152	345	61 230
4 Production processes	136 468	289 677	99 919	104 965	76 376	123 651	8 973	47 635	25 685	33 892	12 659	3 390	14 000	917	1 083	979 289
5 Extraction and distrib. of fossil fuels / geothermal energy	88 330	330 893	109 572	146 098	59 934	34 680	14 931	14 081	9 175	5 563	5 685	6 858	10 000	3 448	1 835	841 083
6 Solvent and other product use	1 090 000	662 555	610 775	556 003	314 146	59 130	81 675	82 265	67 149	151 917	131 832	40 635	39 000	21 994	3 752	3 912 828
7 Road transport	676 659	761 402	963 016	1 079 283	498 976	137 270	219 848	176 461	102 764	145 270	71 519	74 085	51 900	58 283	9 062	5 025 798
8 Other mobile sources and machinery	74 282	122 327	278 808	209 380	40 271	7 601	23 850	4 244	6 035	35 661	4 839	19 102	15 200	1 872	984	844 456
9 Waste treatment and disposal	-	26 554	20 413	105 271	51 191	1 785	8 560	162	0	186	669	18	2 000	450	22	217 281
10 Agriculture and forestry, land use and wood stock change (luwc)	386 435	40 000	396 576	546 261	78 885	3 324	892 714	24 761	3 964	388 658	125 914	11 694	0	82 165	1 000	2 982 351
11 Nature	-	40 000	53 234	0	770 941	1 577	11 458	5 556	397 320	17 196	41 014	0	-	0	878	1 339 174
Total (excluding agriculture & forestry, luwc + nature)	2 145 256	2 350 651	2 307 951	2 238 540	1 120 068	378 099	361 923	337 432	225 497	381 419	289 644	154 437	177 100	93 109	17 651	12 578 777
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	0	5	0	0	1	0	1	0	0	1	0	1	1	0	0	1
2 Non-industrial combustion plants	3	2	9	1	5	3	0	3	5	0	21	5	24	6	3	4
3 Combustion in manufacturing industry	1	0	0	0	1	0	0	1	2	1	0	0	1	0	2	0
4 Production processes	6	12	4	5	7	33	2	14	11	9	4	2	8	1	6	8
5 Extraction and distrib. of fossil fuels / geothermal energy	4	14	5	7	5	9	4	4	4	1	2	4	6	4	10	7
6 Solvent and other product use	51	28	26	25	28	16	23	24	30	40	46	26	22	24	21	31
7 Road transport	32	32	42	48	45	36	61	52	46	38	25	48	29	63	51	40
8 Other mobile sources and machinery	3	5	12	9	4	2	7	1	3	9	2	12	9	2	6	7
9 Waste treatment and disposal	-	1	1	5	5	0	2	0	0	0	0	0	1	0	0	2
10 Agriculture and forestry, land use and wood stock change	18	2	17	24	7	1	247	7	2	102	43	8	0	88	6	24
11 Nature	-	2	2	0	69	0	3	2	176	5	14	0	-	0	5	11
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Switzerland	Norway	Malta	Iceland	Poland	Romania	Hungary	Czech Republic	Bulgaria	Slovakia	Croatia	Lithuania	Latvia	Slovenia	Estonia	Total
Emissions in Mg NMVOC																
1 Combustion in energy and transformation industries	41	1 494	17	5	-	-	-	-	-	-	114	-	-	-	-	149 532
2 Non-industrial combustion plants	2 230	11 150	1	0	-	-	-	-	-	-	6 769	-	-	-	-	569 104
3 Combustion in manufacturing industry	425	699	3	0	-	-	-	-	-	-	530	-	-	-	-	62 888
4 Production processes	13 920	20 991	288	0	-	-	-	-	-	-	8 533	-	-	-	-	1 023 021
5 Extraction and distrib. of fossil fuels / geothermal energy	7 434	190 646	0	0	-	-	-	-	-	-	6 114	-	-	-	-	1 045 277
6 Solvent and other product use	118 103	46 593	2 437	2 812	-	-	-	-	-	-	21 883	-	-	-	-	4 104 656
7 Road transport	57 356	76 214	2 640	2 709	-	-	-	-	-	-	27 807	-	-	-	-	5 192 523
8 Other mobile sources and machinery	14 025	15 767	0	1 600	-	-	-	-	-	-	779	-	-	-	-	876 628
9 Waste treatment and disposal	4 128	950	120	0	-	-	-	-	-	-	0	-	-	-	-	222 479
10 Agriculture and forestry, land use and wood stock change (luwc)	8 409	0	14	0	-	-	-	-	-	-	0	-	-	-	-	2 990 774
11 Nature	97 123	0	0	0	-	-	-	-	-	-	69 859	-	-	-	-	1 506 156
Total (excluding agriculture & forestry, luwc + nature)	217 662	364 504	5 506	7 126	-	-	-	-	-	-	72 529	-	-	-	-	13 246 104
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	1
2 Non-industrial combustion plants	1	3	0	0	-	-	-	-	-	-	9	-	-	-	-	4
3 Combustion in manufacturing industry	0	0	0	0	-	-	-	-	-	-	1	-	-	-	-	0
4 Production processes	6	6	5	0	-	-	-	-	-	-	12	-	-	-	-	8
5 Extraction and distrib. of fossil fuels / geothermal energy	3	52	0	0	-	-	-	-	-	-	8	-	-	-	-	8
6 Solvent and other product use	54	13	44	39	-	-	-	-	-	-	30	-	-	-	-	31
7 Road transport	26	21	48	38	-	-	-	-	-	-	38	-	-	-	-	39
8 Other mobile sources and machinery	6	4	0	22	-	-	-	-	-	-	1	-	-	-	-	7
9 Waste treatment and disposal	2	0	2	0	-	-	-	-	-	-	0	-	-	-	-	2
10 Agriculture and forestry, land use and wood stock change	4	0	0	0	-	-	-	-	-	-	0	-	-	-	-	23
11 Nature	45	0	0	0	-	-	-	-	-	-	96	-	-	-	-	11
Total	100	100	100	100	-	-	-	-	-	-	100	-	-	-	-	100

2.4 Methane - CH₄

Figure 2.4.1: Comparison of national total emissions 1990 & 1994

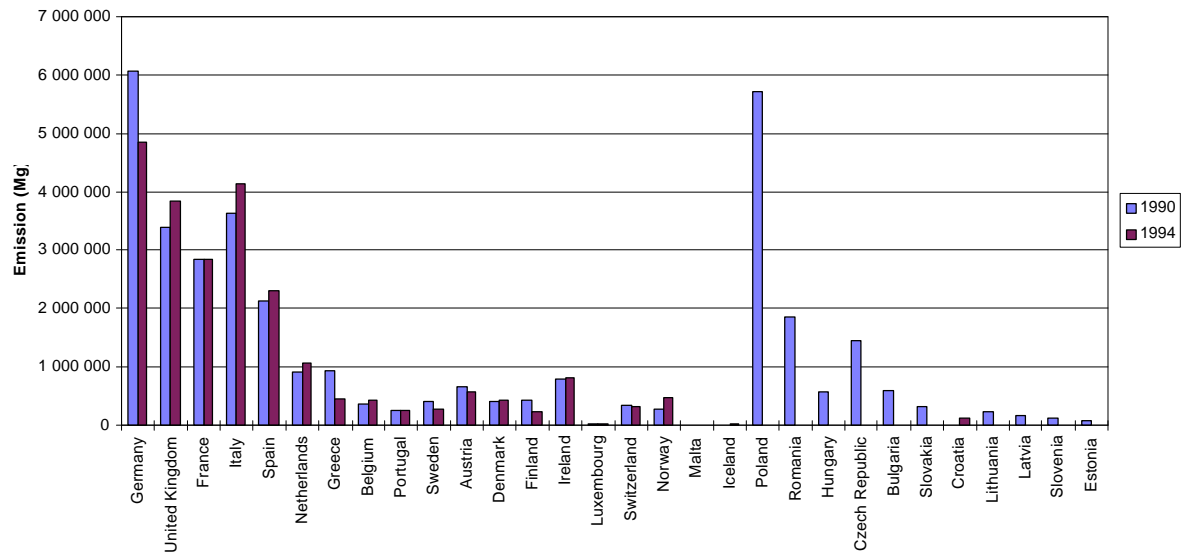
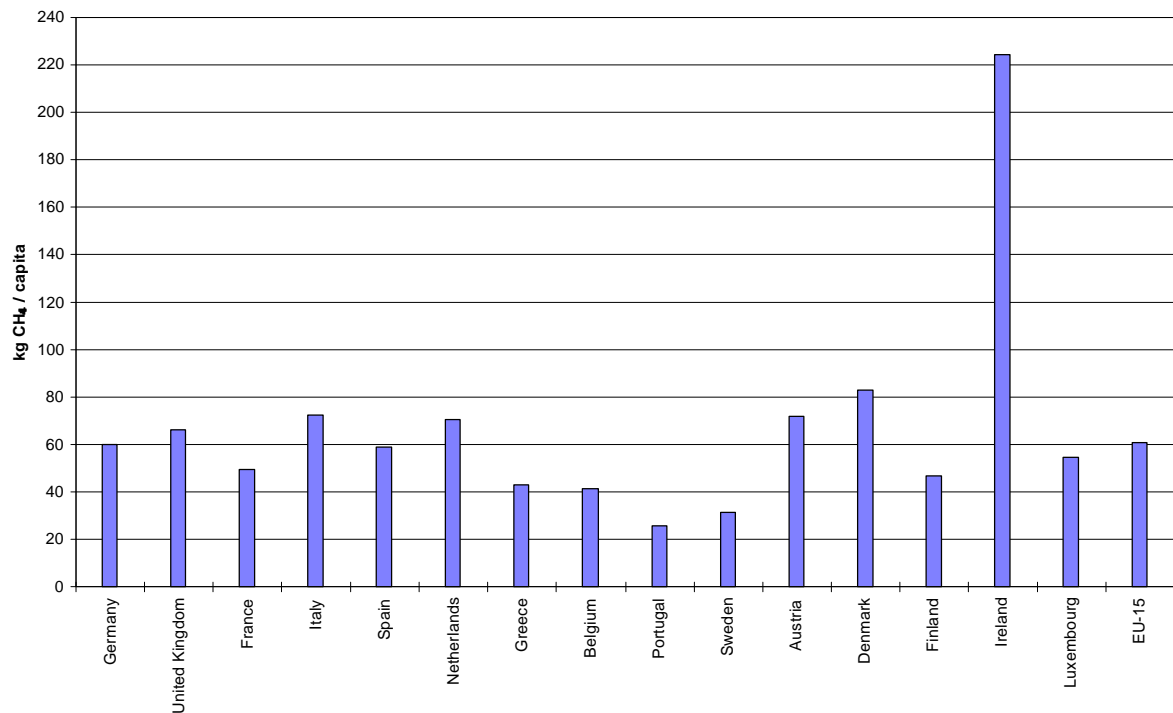
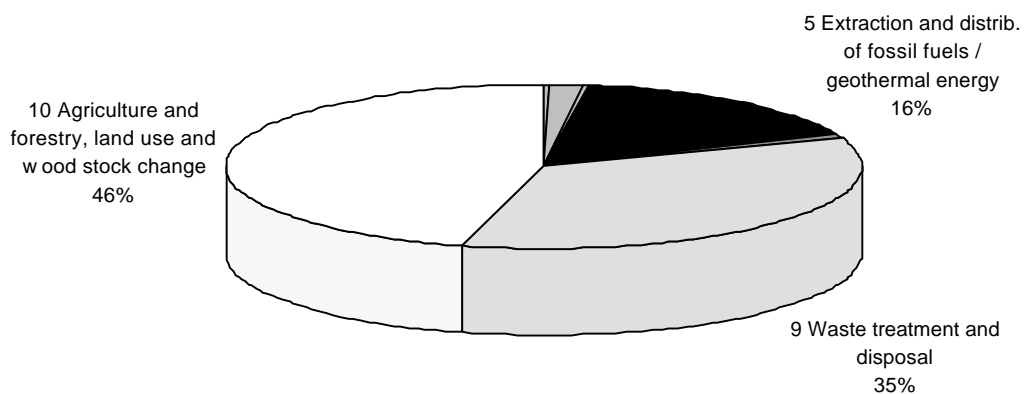


Figure 2.4.2: National total emissions per capita 1994



* CORINAIR 94 and CORINAIR 90 are not fully consistent, but emissions estimates of CORINAIR 90 are shown here to provide a general indicative trend.

Figure 2.4.3: EU-15 main sector split 1994



- 1 Combustion in energy and transformation industries
- 2 Non-industrial combustion plants
- 3 Combustion in manufacturing industry
- 4 Production processes
- 5 Extraction and distrib. of fossil fuels / geothermal energy
- 6 Solvent and other product use
- 7 Road transport
- 8 Other mobile sources and machinery
- 9 Waste treatment and disposal
- 10 Agriculture and forestry, land use and wood stock change

Summary Table 4: Methane

CORINAIR 94 / January 1997

	Germany	United Kingdom	France	Italy	Spain	Netherlands	Greece	Belgium	Portugal	Sweden	Austria	Denmark	Finland	Ireland	Luxembourg	EU-15
Emissions in M g CH₄																
1 Combustion in energy and transformation industries	8 968	11 926	1 576	5 920	9 149	1 289	683	203	819	1 014	96	1 142	2 000	24	2	44 811
2 Non-industrial combustion plants	60 409	46 283	153 283	18 445	41 457	21 629	331	4 573	7 046	216	20 762	5 819	9 000	2 680	514	392 446
3 Combustion in manufacturing industry	11 529	6 156	5 167	5 827	7 382	3 440	949	2 017	2 268	1 085	453	666	2 000	128	59	49 126
4 Production processes	8 580	56	5 655	9 718	3 999	6 642	0	2 051	1 818	43	105	1 350	4 000	0	0	44 017
5 Extraction and distrib. of fossil fuels / geothermal energy	1 161 048	810 931	341 788	393 395	653 199	187 439	48 554	39 413	10	0	4 796	13 751	100	10 680	1 534	3 666 638
6 Solvent and other product use	-	-	0	0	0	23	0	0	0	0	0	0	0	0	0	23
7 Road transport	35 616	25 284	17 736	29 353	13 060	6 200	3 538	10 015	1 683	13 215	3 629	1 576	2 600	1 227	175	164 906
8 Other mobile sources and machinery	2 307	3 223	0	5 289	1 613	437	353	0	395	2 156	237	1 303	400	38	9	17 760
9 Waste treatment and disposal	1 900 000	1 828 373	689 864	1 765 820	651 447	288 290	114 674	90 144	35 180	40 243	81 470	77 790	122 000	136 030	2 684	7 824 009
10 Agriculture and forestry, land use and wood stock change	1 660 000	1 115 730	1 626 471	1 897 888	928 101	562 556	279 551	272 268	203 662	215 570	463 415	327 243	95 000	656 954	16 932	10 321 341
11 Nature	-	0	95 491	72 088	854 461	112 392	33 913	13 090	130 069	1 690 637	57 070	354 238	-	36 787	802	3 451 038
Total (excluding Nature)	4 848 457	3 847 962	2 841 539	4 131 655	2 309 407	1 077 608	448 633	420 684	252 881	273 542	574 963	430 640	237 100	807 761	21 909	22 524 740
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
2 Non-industrial combustion plants	1	1	5	0	2	2	0	1	3	0	4	1	4	0	2	2
3 Combustion in manufacturing industry	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
4 Production processes	0	0	0	0	0	1	0	0	1	0	0	0	2	0	0	0
5 Extraction and distrib. of fossil fuels / geothermal energy	24	21	12	10	28	17	11	9	0	0	1	3	0	1	7	16
6 Solvent and other product use	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Road transport	1	1	1	1	1	1	1	2	1	5	1	0	1	0	1	1
8 Other mobile sources and machinery	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
9 Waste treatment and disposal	39	48	24	43	28	27	26	21	14	15	14	18	51	17	12	35
10 Agriculture and forestry, land use and wood stock change	34	29	57	46	40	52	62	65	81	79	81	76	40	81	77	46
11 Nature	-	0	3	2	37	10	8	3	51	618	10	82	-	5	4	15
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Emissions in M g CH₄																
	Switzerland	Norway	Malta	Iceland	Poland	Romania	Hungary	Czech Republic	Bulgaria	Slovakia	Croatia	Lithuania	Latvia	Slovenia	Estonia	Total
1 Combustion in energy and transformation industries	74	2 911	16	0	-	-	-	-	-	-	65	-	-	-	-	47 878
2 Non-industrial combustion plants	3 256	14 146	4	0	-	-	-	-	-	-	4 656	-	-	-	-	414 508
3 Combustion in manufacturing industry	344	388	4	4	-	-	-	-	-	-	398	-	-	-	-	50 264
4 Production processes	631	1 007	0	0	-	-	-	-	-	-	722	-	-	-	-	46 376
5 Extraction and distrib. of fossil fuels / geothermal energy	13 018	29 797	0	0	-	-	-	-	-	-	39 514	-	-	-	-	3 748 967
6 Solvent and other product use	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	23
7 Road transport	3 415	1 683	156	141	-	-	-	-	-	-	636	-	-	-	-	170 937
8 Other mobile sources and machinery	969	476	389	41	-	-	-	-	-	-	40	-	-	-	-	19 676
9 Waste treatment and disposal	70 853	318 806	5 524	9 860	-	-	-	-	-	-	29 089	-	-	-	-	8 258 141
10 Agriculture and forestry, land use and wood stock change	223 037	97 457	3 315	11 340	-	-	-	-	-	-	62 810	-	-	-	-	10 719 300
11 Nature	58 403	0	0	0	-	-	-	-	-	-	143 912	-	-	-	-	3 653 353
Total (excluding Nature)	315 597	466 671	9 410	21 386	-	-	-	-	-	-	137 929	-	-	-	-	23 475 733
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	0	1	0	0	-	-	-	-	-	-	0	-	-	-	-	0
2 Non-industrial combustion plants	1	3	0	0	-	-	-	-	-	-	3	-	-	-	-	2
3 Combustion in manufacturing industry	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
4 Production processes	0	0	0	0	-	-	-	-	-	-	1	-	-	-	-	0
5 Extraction and distrib. of fossil fuels / geothermal energy	4	6	0	0	-	-	-	-	-	-	29	-	-	-	-	16
6 Solvent and other product use	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
7 Road transport	1	0	2	1	-	-	-	-	-	-	0	-	-	-	-	1
8 Other mobile sources and machinery	0	0	4	0	-	-	-	-	-	-	0	-	-	-	-	0
9 Waste treatment and disposal	22	68	59	46	-	-	-	-	-	-	21	-	-	-	-	35
10 Agriculture and forestry, land use and wood stock change	71	21	35	53	-	-	-	-	-	-	46	-	-	-	-	46
11 Nature	19	0	0	0	-	-	-	-	-	-	104	-	-	-	-	16
Total	100	100	100	100	-	-	-	-	-	-	100	-	-	-	-	100

2.5 Carbon Monoxide - CO

Figure 2.5.1: Comparison of national total emissions 1990 & 1994

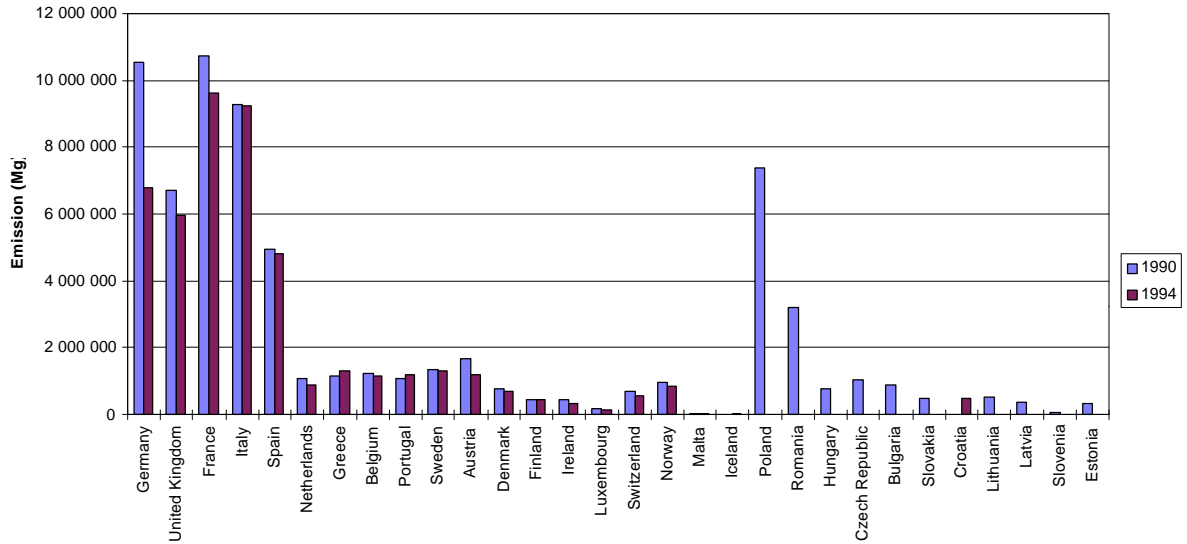
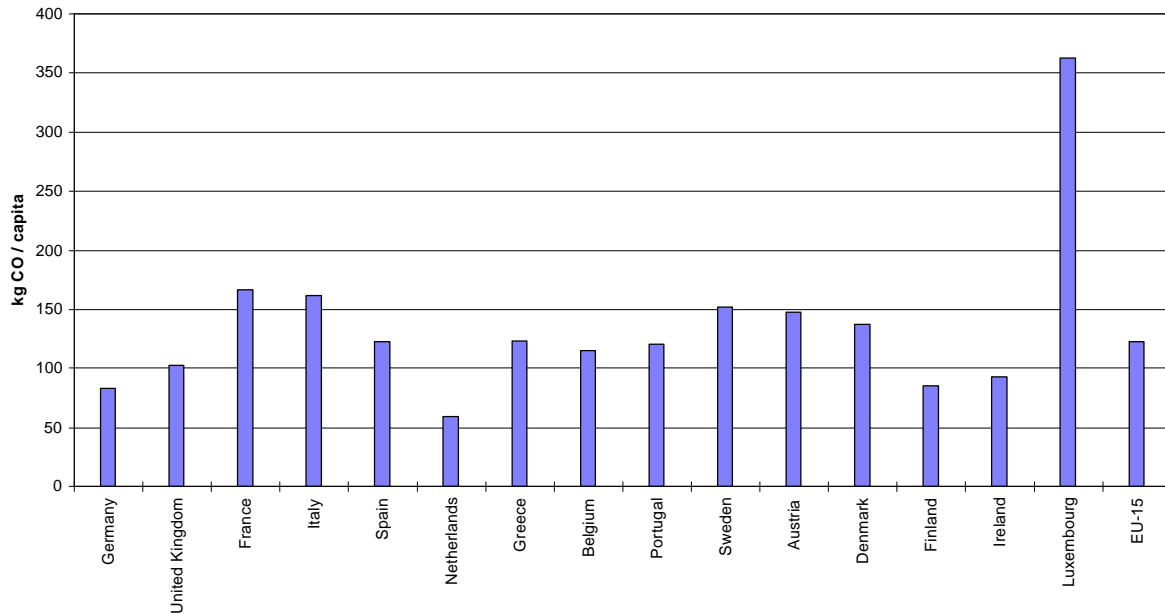
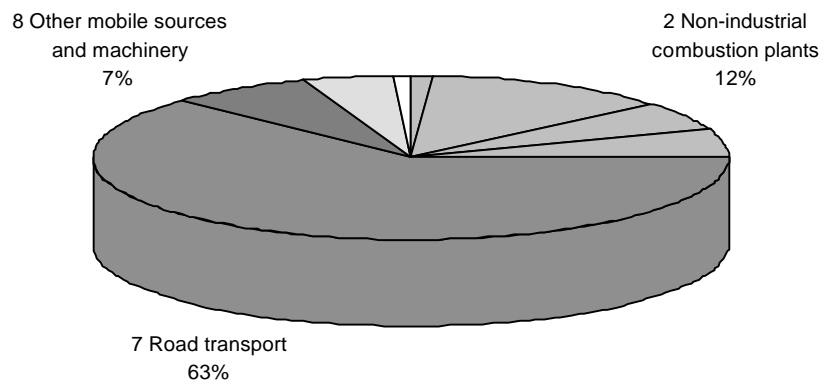


Figure 2.5.2: National total emissions per capita 1994



* CORINAIR 94 and CORINAIR 90 are not fully consistent, but emissions estimates of CORINAIR 90 are shown here to provide a general indicative trend.

Figure 2.5.3: EU-15 main sector split 1994



- 1 Combustion in energy and transformation industries
- 2 Non-industrial combustion plants
- 3 Combustion in manufacturing industry
- 4 Production processes
- 5 Extraction and distrib. of fossil fuels / geothermal energy
- 6 Solvent and other product use
- 7 Road transport
- 8 Other mobile sources and machinery
- 9 Waste treatment and disposal
- 10 Agriculture and forestry, land use and wood stock change

Summary Table 5: Carbon Monoxide

CORINAIR 94 / January 1997

	Germany	United Kingdom	France	Italy	Spain	Netherlands	Greece	Belgium	Portugal	Sweden	Austria	Denmark	Finland	Ireland	Luxembourg	EU-15
Emissions in M g CO																
1 Combustion in energy and transformation industries	141 958	251 133	17 122	43 108	19 568	7 873	6 751	4 546	4 205	7 296	735	47 265	7 000	3 489	43	562 092
2 Non-industrial combustion plants	1 176 386	287 594	1 894 719	288 449	865 962	101 089	5 050	119 150	119 211	5 353	499 264	135 125	39 000	60 322	8 716	5 605 390
3 Combustion in manufacturing industry	675 810	52 689	543 174	372 277	394 026	121 004	5 286	8 208	310 077	22 845	6 485	4 543	41 000	1 637	76 282	2 635 343
4 Production processes	595 142	6 224	623 464	480 917	233 021	110 453	24 510	17 228	14 558	4 804	292 890	0	0	0	13 717	2 416 928
5 Extraction and distrib. of fossil fuels / geothermal energy	13 000	47 324	0	0	0	8 175	0	0	0	0	0	36 564	0	0	0	105 063
6 Solvent and other product use	-	-	0	0	0	593	0	0	0	0	0	0	0	0	0	593
7 Road transport	3 953 233	4 471 665	5 235 833	5 810 763	2 738 672	515 600	978 893	995 364	733 363	1 164 062	363 040	412 995	311 000	261 285	43 838	27 989 606
8 Other mobile sources and machinery	241 746	847 743	1 013 091	678 166	113 099	26 154	109 660	2 458	13 753	109 734	12 164	78 910	40 000	5 723	2 603	3 295 004
9 Waste treatment and disposal	-	2 956	233 283	1 526 880	315 162	3 330	23 984	19 143	0	4 354	4 470	0	0	600	8	2 134 170
10 Agriculture and forestry, land use and wood stock change	-	0	41 652	25 905	121 713	14 138	134 498	0	0	0	1 500	0	0	0	0	339 406
11 Nature	-	0	65 308	4 445	11 617	13 194	72	0	102	1 950	0	0	0	0	0	96 688
Total (excluding Nature)	6 797 275	5 967 328	9 602 337	9 226 465	4 801 223	907 806	1 288 632	1 166 097	1 195 167	1 318 448	1 180 548	715 402	438 000	333 056	145 207	45 082 991
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	2	4	0	0	0	1	1	0	0	1	0	7	2	1	0	1
2 Non-industrial combustion plants	17	5	20	3	18	11	0	10	10	0	42	19	9	18	6	12
3 Combustion in manufacturing industry	10	1	6	4	8	13	0	1	26	2	1	1	9	0	53	6
4 Production processes	9	0	6	5	5	12	2	1	1	0	25	0	0	0	9	5
5 Extraction and distrib. of fossil fuels / geothermal energy	0	1	0	0	0	1	0	0	0	0	0	5	0	0	0	0
6 Solvent and other product use	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Road transport	58	75	55	63	57	57	76	85	61	88	31	58	71	78	30	62
8 Other mobile sources and machinery	4	14	11	7	2	3	9	0	1	8	1	11	9	2	2	7
9 Waste treatment and disposal	-	0	2	17	7	0	2	2	0	0	0	0	0	0	0	5
10 Agriculture and forestry, land use and wood stock change	-	0	0	0	3	2	10	0	0	0	0	0	0	0	0	1
11 Nature	-	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Emissions in M g CO																
	Switzerland	Norway	Malta	Iceland	Poland	Romania	Hungary	Czech Republic	Bulgaria	Slovakia	Croatia	Lithuania	Latvia	Slovenia	Estonia	Total
1 Combustion in energy and transformation industries	353	5 981	296	22	-	-	-	-	-	-	671	-	-	-	-	569 414
2 Non-industrial combustion plants	62 625	159 903	20	0	-	-	-	-	-	-	112 288	-	-	-	-	5 940 226
3 Combustion in manufacturing industry	14 938	5 963	20	63	-	-	-	-	-	-	1 399	-	-	-	-	2 657 725
4 Production processes	11 301	48 364	5	0	-	-	-	-	-	-	10 633	-	-	-	-	2 487 231
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	0	-	-	-	-	-	-	8	-	-	-	-	105 071
6 Solvent and other product use	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	593
7 Road transport	346 759	585 975	20 974	19 210	-	-	-	-	-	-	318 210	-	-	-	-	29 280 734
8 Other mobile sources and machinery	101 145	56 209	2 183	5 358	-	-	-	-	-	-	22 748	-	-	-	-	3 482 647
9 Waste treatment and disposal	11 938	670	210	724	-	-	-	-	-	-	4	-	-	-	-	2 147 716
10 Agriculture and forestry, land use and wood stock change	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	339 406
11 Nature	2 017	0	0	0	-	-	-	-	-	-	18	-	-	-	-	98 723
Total (excluding Nature)	549 059	863 065	23 708	25 377	-	-	-	-	-	-	465 960	-	-	-	-	47 010 160
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	0	1	1	0	-	-	-	-	-	-	0	-	-	-	-	1
2 Non-industrial combustion plants	11	19	0	0	-	-	-	-	-	-	24	-	-	-	-	13
3 Combustion in manufacturing industry	3	1	0	0	-	-	-	-	-	-	0	-	-	-	-	6
4 Production processes	2	6	0	0	-	-	-	-	-	-	2	-	-	-	-	5
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
6 Solvent and other product use	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
7 Road transport	63	68	88	76	-	-	-	-	-	-	68	-	-	-	-	62
8 Other mobile sources and machinery	18	7	9	21	-	-	-	-	-	-	5	-	-	-	-	7
9 Waste treatment and disposal	2	0	1	3	-	-	-	-	-	-	0	-	-	-	-	5
10 Agriculture and forestry, land use and wood stock change	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	1
11 Nature	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
Total	100	100	100	100	-	-	-	-	-	-	100	-	-	-	-	100

2.6 Carbon Dioxide - CO₂

Within the update of CORINAIR 90 to CORINAIR 94 CO₂ emissions from land use and wood stock change (LUWC) have been introduced. CO₂ emissions from LUWC are reported in sector 10. To ensure comparability with CORINAIR 90, the national total for CO₂ does not include emissions from sector 10 (agriculture and forestry, land use and wood stock change) or from sector 11 (nature).

Figure 2.6.1: Comparison of national total emissions 1990 & 1994

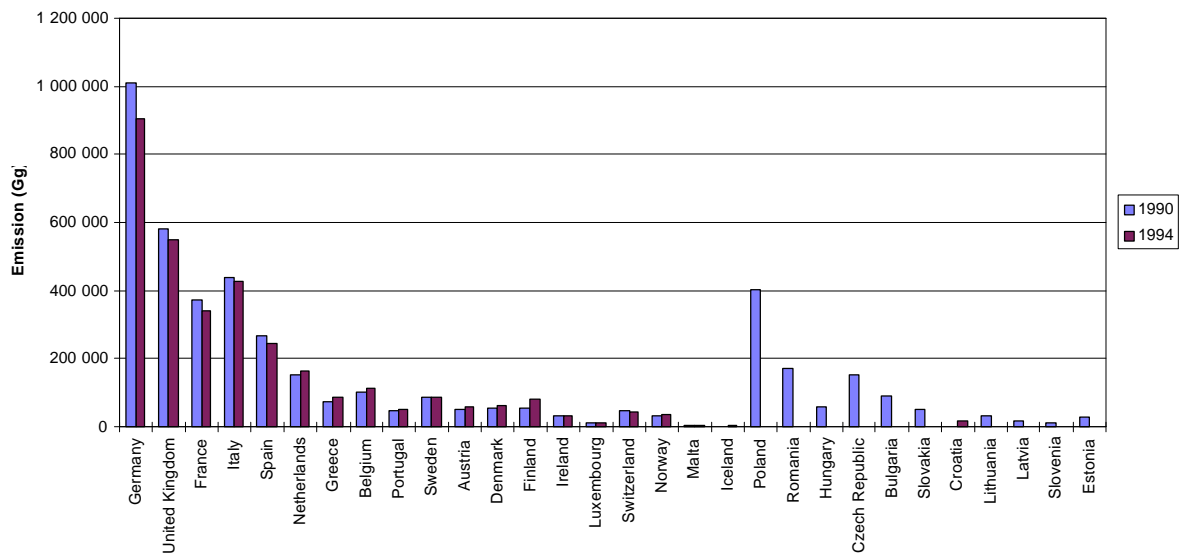
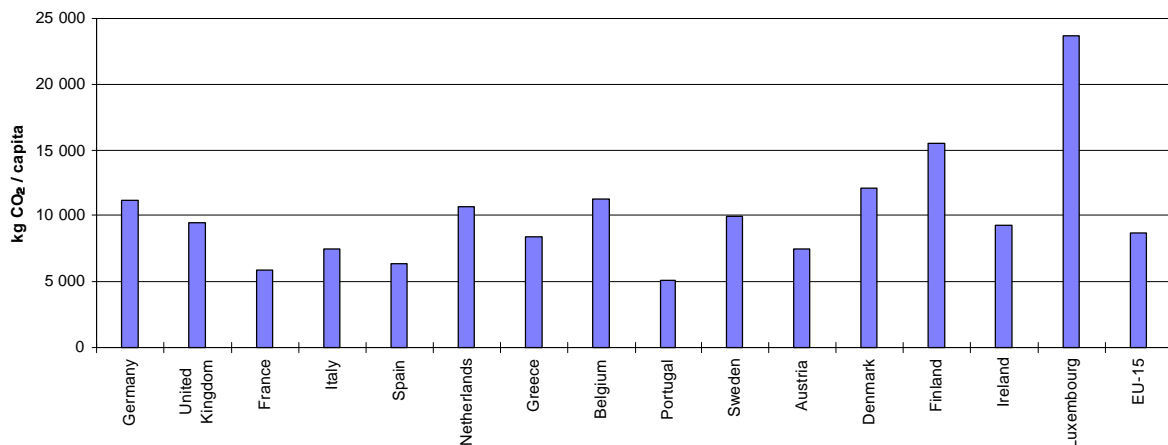
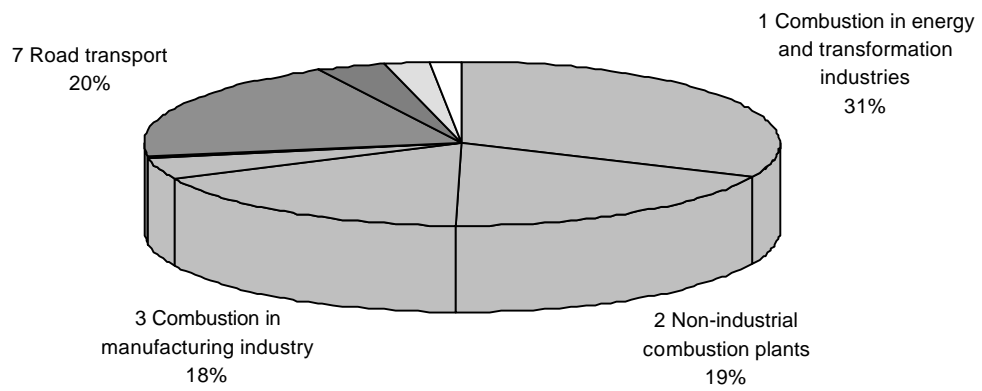


Figure 2.6.2: National total emissions per capita 1994



* CORINAIR 94 and CORINAIR 90 are not fully consistent, but emissions estimates of CORINAIR 90 are shown here to provide a general indicative trend.

Figure 2.6.3: EU-15 main sector split 1994



- 1 Combustion in energy and transformation industries
- 2 Non-industrial combustion plants
- 3 Combustion in manufacturing industry
- 4 Production processes
- 5 Extraction and distrib. of fossil fuels / geothermal energy
- 6 Solvent and other product use
- 7 Road transport
- 8 Other mobile sources and machinery
- 9 Waste treatment and disposal
- 10 Agriculture and forestry, land use and wood stock change (luw c)

Summary Table 6: Carbon Dioxide

CORINAIR 94 / January 1997

	Germany	United Kingdom	France	Italy	Spain	Netherlands	Greece	Belgium	Portugal	Sweden	Austria	Denmark	Finland	Ireland	Luxembourg	EU-15
Emissions in Gg CO₂																
1 Combustion in energy and transformation industries	360 075	197 895	45 929	130 912	65 790	48 238	46 031	29 434	14 656	14 355	9 278	35 008	25 000	12 619	1 064	1 036 284
2 Non-industrial combustion plants	182 992	115 178	87 685	69 121	29 481	35 351	5 340	30 502	4 091	7 936	12 375	6 285	12 000	9 145	1 224	608 705
3 Combustion in manufacturing industry	156 383	86 373	50 094	75 847	64 432	38 217	8 980	22 059	14 664	11 751	7 066	5 857	29 000	3 640	5 475	579 837
4 Production processes	25 180	11 506	16 809	28 445	15 612	5 387	7 364	6 863	4 204	1 088	13 966	1 659	800	1 827	447	141 157
5 Extraction and distrib. of fossil fuels / geothermal energy	-	10	1	0	0	418	0	0	0	0	148	726	0	0	0	1 303
6 Solvent and other product use	-	-	1 904	0	0	144	255	256	0	474	411	127	-	69	12	3 651
7 Road transport	159 395	110 820	118 581	91 239	50 206	27 083	13 305	23 945	11 405	16 265	14 931	9 413	9 500	5 495	1 143	662 725
8 Other mobile sources and machinery	20 292	18 721	14 947	22 825	13 274	4 523	6 184	190	1 656	7 141	1 498	3 757	1 700	564	100	117 372
9 Waste treatment and disposal	-	9 369	5 028	8 635	7 878	4 014	352	379	403	27 731	7	14	1 000	54	19	64 883
10 Agriculture and forestry, land use and wood stock change (luwc)	-30 000	1 270	-32 817	0	14 333	9 564	0	0	0	0	-15 542	0	0	-5 620	0	-58 812
11 Nature	-	0	0	0	-	0	-	-	2 871	0	-	-	-	-	-	2 871
Total (excluding agriculture & forestry, luwc + nature)	904 316	549 872	340 976	427 024	246 673	163 436	87 811	113 628	51 079	86 741	59 680	62 846	79 000	33 413	9 484	3 215 980
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	40	36	13	31	27	30	52	26	29	17	16	56	32	38	11	32
2 Non-industrial combustion plants	20	21	26	16	12	22	6	27	8	9	21	10	15	27	13	19
3 Combustion in manufacturing industry	17	16	15	18	26	23	10	19	29	14	12	9	37	11	58	18
4 Production processes	3	2	5	7	6	3	8	6	8	1	23	3	1	5	5	4
5 Extraction and distrib. of fossil fuels / geothermal energy	-	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
6 Solvent and other product use	-	-	1	0	0	0	0	0	0	1	1	0	-	0	0	0
7 Road transport	18	20	35	21	20	17	15	21	22	19	25	15	12	16	12	21
8 Other mobile sources and machinery	2	3	4	5	5	3	7	0	3	8	3	6	2	2	1	4
9 Waste treatment and disposal	-	2	1	2	3	2	0	0	1	32	0	0	1	0	0	2
10 Agriculture and forestry, land use and wood stock change	-3	0	-10	0	6	6	0	0	0	0	-26	0	0	-17	0	-2
11 Nature	-	0	0	0	-	0	-	-	6	0	-	-	-	-	-	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Switzerland	Norway	Malta	Iceland	Poland	Romania	Hungary	Czech Republic	Bulgaria	Slovakia	Croatia	Lithuania	Latvia	Slovenia	Estonia	Total
Emissions in Gg CO₂																
1 Combustion in energy and transformation industries	1 036	8 878	1 572	3	-	-	-	-	-	-	2 611	-	-	-	-	1 050 384
2 Non-industrial combustion plants	16 713	1 986	101	36	-	-	-	-	-	-	2 980	-	-	-	-	630 521
3 Combustion in manufacturing industry	5 110	3 610	86	228	-	-	-	-	-	-	5 459	-	-	-	-	594 331
4 Production processes	2 731	6 650	4	409	-	-	-	-	-	-	2 059	-	-	-	-	153 010
5 Extraction and distrib. of fossil fuels / geothermal energy	0	654	0	0	-	-	-	-	-	-	567	-	-	-	-	2 524
6 Solvent and other product use	368	145	8	9	-	-	-	-	-	-	0	-	-	-	-	4 181
7 Road transport	12 956	8 198	351	657	-	-	-	-	-	-	2 282	-	-	-	-	687 169
8 Other mobile sources and machinery	2 817	6 057	273	840	-	-	-	-	-	-	1 120	-	-	-	-	128 479
9 Waste treatment and disposal	1 382	1 235	0	0	-	-	-	-	-	-	428	-	-	-	-	67 927
10 Agriculture and forestry, land use and wood stock change (luwc)	0	173	0	0	-	-	-	-	-	-	0	-	-	-	-	-58 639
11 Nature	-	-	0	0	-	-	-	-	-	-	0	-	-	-	-	2 871
Total (excluding agriculture & forestry, luwc + nature)	43 113	37 413	2 395	2 182	-	-	-	-	-	-	17 506	-	-	-	-	3 318 589
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	2	24	66	0	-	-	-	-	-	-	15	-	-	-	-	32
2 Non-industrial combustion plants	39	5	4	2	-	-	-	-	-	-	17	-	-	-	-	19
3 Combustion in manufacturing industry	12	10	4	10	-	-	-	-	-	-	31	-	-	-	-	18
4 Production processes	6	18	0	19	-	-	-	-	-	-	12	-	-	-	-	5
5 Extraction and distrib. of fossil fuels / geothermal energy	0	2	0	0	-	-	-	-	-	-	3	-	-	-	-	0
6 Solvent and other product use	1	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
7 Road transport	30	22	15	30	-	-	-	-	-	-	13	-	-	-	-	21
8 Other mobile sources and machinery	7	16	11	38	-	-	-	-	-	-	6	-	-	-	-	4
9 Waste treatment and disposal	3	3	0	0	-	-	-	-	-	-	2	-	-	-	-	2
10 Agriculture and forestry, land use and wood stock change	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	-2
11 Nature	-	-	0	0	-	-	-	-	-	-	0	-	-	-	-	0
Total	100	100	100	100	-	-	-	-	-	-	100	-	-	-	-	100

2.7 Nitrous Oxide - N₂O

Figure 2.7.1: Comparison of national total emissions 1990 & 1994

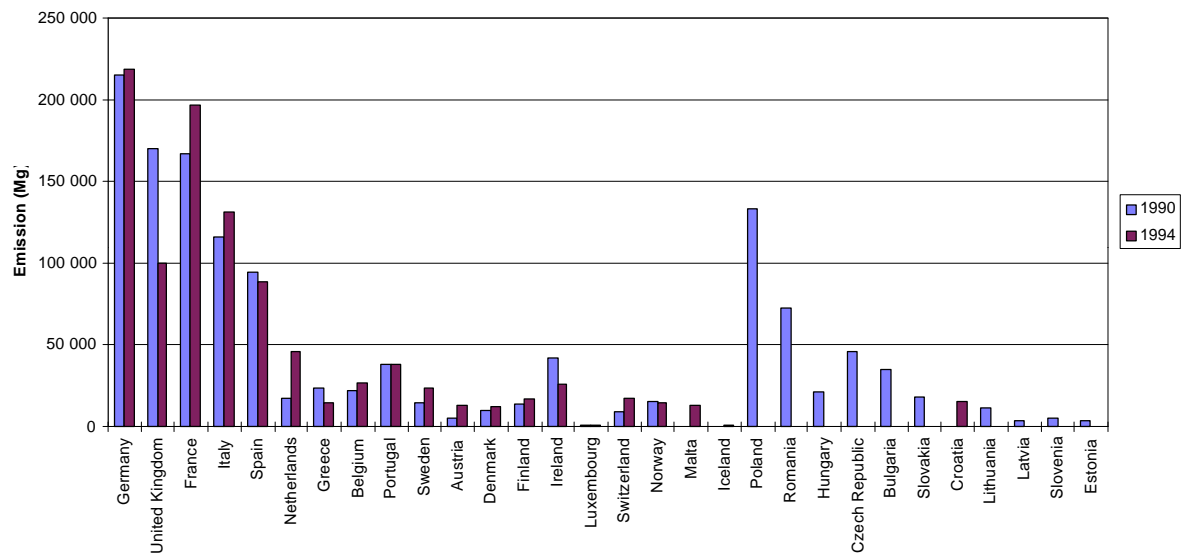
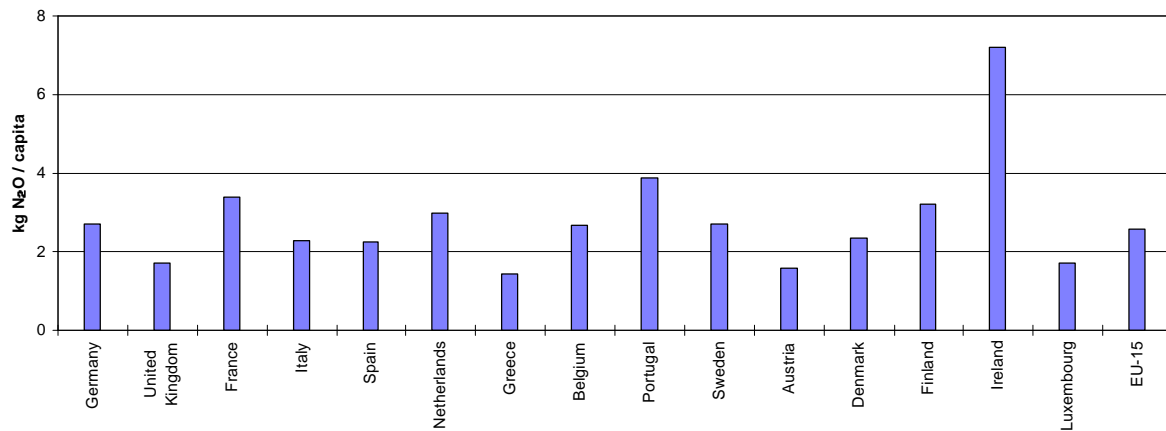
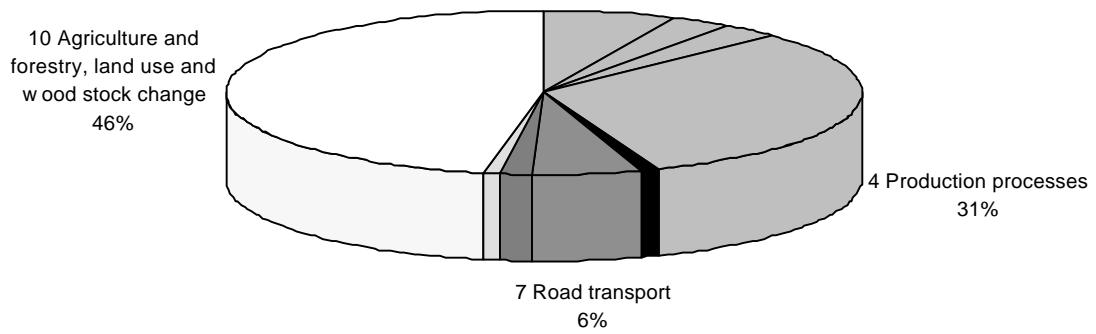


Figure 2.7.2: National total emissions per capita 1994



* CORINAIR 94 and CORINAIR 90 are not fully consistent, but emissions estimates of CORINAIR 90 are shown here to provide a general indicative trend.

Figure 2.7.3: EU-15 main sector split 1994



- 1 Combustion in energy and transformation industries
- 2 Non-industrial combustion plants
- 3 Combustion in manufacturing industry
- 4 Production processes
- 5 Extraction and distrib. of fossil fuels / geothermal energy
- 6 Solvent and other product use
- 7 Road transport
- 8 Other mobile sources and machinery
- 9 Waste treatment and disposal
- 10 Agriculture and forestry, land use and wood stock change

Summary Table 7: Nitrous Oxides

CORINAIR 94 / January 1997

	Germany	United Kingdom	France	Italy	Spain	Netherlands	Greece	Belgium	Portugal	Sweden	Austria	Denmark	Finland	Ireland	Luxembourg	EU-15
Emissions in Mg N₂O																
1 Combustion in energy and transformation industries	12 906	7 816	1 311	19 146	9 255	786	1 385	3 025	2 225	1 030	116	1 171	1 000	1 649	4	62 825
2 Non-industrial combustion plants	4 685	878	4 185	7 668	2 534	461	1 036	3 450	231	246	585	193	1 300	903	19	28 374
3 Combustion in manufacturing industry	4 457	1 047	3 025	7 327	6 558	448	1 209	1 773	2 030	818	100	173	1 000	382	37	30 384
4 Production processes	81 437	70 261	97 047	15 347	6 824	11 338	0	5 682	2 242	2 369	567	0	2 800	2 620	0	298 534
5 Extraction and distrib. of fossil fuels / geothermal energy	-	-	0	0	0	0	0	0	0	0	0	13	0	0	0	13
6 Solvent and other product use	6 200	-	1 959	0	0	0	0	0	0	0	750	0	200	0	0	9 109
7 Road transport	19 000	6 548	5 939	3 378	2 322	6 250	141	1 271	672	1 208	3 892	816	800	342	90	52 669
8 Other mobile sources and machinery	-	2 550	328	4 155	343	687	2 346	5	52	1 844	666	876	200	230	7	14 289
9 Waste treatment and disposal	4 000	429	2 585	1 351	489	522	0	128	0	4	13	0	100	0	23	9 644
10 Agriculture and forestry, land use and wood stock change	85 800	9 975	80 108	72 564	59 989	25 400	8 612	11 710	30 912	16 095	5 965	8 958	9 000	19 859	509	445 456
11 Nature	-	0	34 946	6 598	107 426	13 550	163 067	1 297	16 830	18 551	858	5 475	-	0	56	368 654
Total (excluding Nature)	218 485	99 504	196 487	130 936	88 314	45 850	14 729	27 044	38 364	23 614	12 654	12 200	16 400	25 985	689	951 254
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	6	8	1	15	10	2	9	11	6	4	1	10	6	6	1	7
2 Non-industrial combustion plants	2	1	2	6	3	1	7	13	1	1	5	2	8	3	3	3
3 Combustion in manufacturing industry	2	1	2	6	7	1	8	7	5	3	1	1	6	1	5	3
4 Production processes	37	71	49	12	8	25	0	21	6	10	4	0	17	10	0	31
5 Extraction and distrib. of fossil fuels / geothermal energy	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Solvent and other product use	3	-	1	0	0	0	0	0	0	0	6	0	1	0	0	1
7 Road transport	9	7	3	3	3	14	1	5	2	5	31	7	5	1	13	6
8 Other mobile sources and machinery	-	3	0	3	0	1	16	0	0	8	5	7	1	1	1	2
9 Waste treatment and disposal	2	0	1	1	1	1	0	0	0	0	0	0	1	0	3	1
10 Agriculture and forestry, land use and wood stock change	39	10	41	55	68	55	58	43	81	68	47	73	55	76	74	47
11 Nature	-	0	18	5	122	30	1 107	5	44	79	7	45	-	0	8	39
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Emissions in Mg N₂O																
	Switzerland	Norway	Malta	Iceland	Poland	Romania	Hungary	Czech Republic	Bulgaria	Slovakia	Croatia	Lithuania	Latvia	Slovenia	Estonia	Total
1 Combustion in energy and transformation industries	4	189	34	0	-	-	-	-	-	-	-	-	-	-	-	63 359
2 Non-industrial combustion plants	155	531	11	6	-	-	-	-	-	-	291	-	-	-	-	29 368
3 Combustion in manufacturing industry	27	839	2	0	-	-	-	-	-	-	482	-	-	-	-	31 735
4 Production processes	312	5 365	0	0	-	-	-	-	-	-	2 490	-	-	-	-	306 700
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	13
6 Solvent and other product use	376	0	0	0	-	-	-	-	-	-	0	-	-	-	-	9 485
7 Road transport	1 643	696	11	8	-	-	-	-	-	-	80	-	-	-	-	55 107
8 Other mobile sources and machinery	53	174	11	21	-	-	-	-	-	-	561	-	-	-	-	15 108
9 Waste treatment and disposal	267	36	12 895	0	-	-	-	-	-	-	0	-	-	-	-	22 842
10 Agriculture and forestry, land use and wood stock change	14 639	6 350	43	458	-	-	-	-	-	-	10 693	-	-	-	-	477 640
11 Nature	4 156	0	0	0	-	-	-	-	-	-	2 280	-	-	-	-	375 090
Total (excluding Nature)	17 476	14 180	13 007	493	-	-	-	-	-	-	14 903	-	-	-	-	1 011 314
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	0	1	0	0	-	-	-	-	-	-	2	-	-	-	-	6
2 Non-industrial combustion plants	1	4	0	1	-	-	-	-	-	-	2	-	-	-	-	3
3 Combustion in manufacturing industry	0	6	0	0	-	-	-	-	-	-	3	-	-	-	-	3
4 Production processes	2	38	0	0	-	-	-	-	-	-	17	-	-	-	-	30
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
6 Solvent and other product use	2	0	0	0	-	-	-	-	-	-	0	-	-	-	-	1
7 Road transport	9	5	0	2	-	-	-	-	-	-	1	-	-	-	-	5
8 Other mobile sources and machinery	0	1	0	4	-	-	-	-	-	-	4	-	-	-	-	1
9 Waste treatment and disposal	2	0	99	0	-	-	-	-	-	-	0	-	-	-	-	2
10 Agriculture and forestry, land use and wood stock change	84	45	0	93	-	-	-	-	-	-	72	-	-	-	-	47
11 Nature	24	0	0	0	-	-	-	-	-	-	15	-	-	-	-	37
Total	100	100	100	100	-	-	-	-	-	-	100	-	-	-	-	100

2.8 Ammonia - NH₃

Figure 2.8.1: Comparison of national total emissions 1990 & 1994

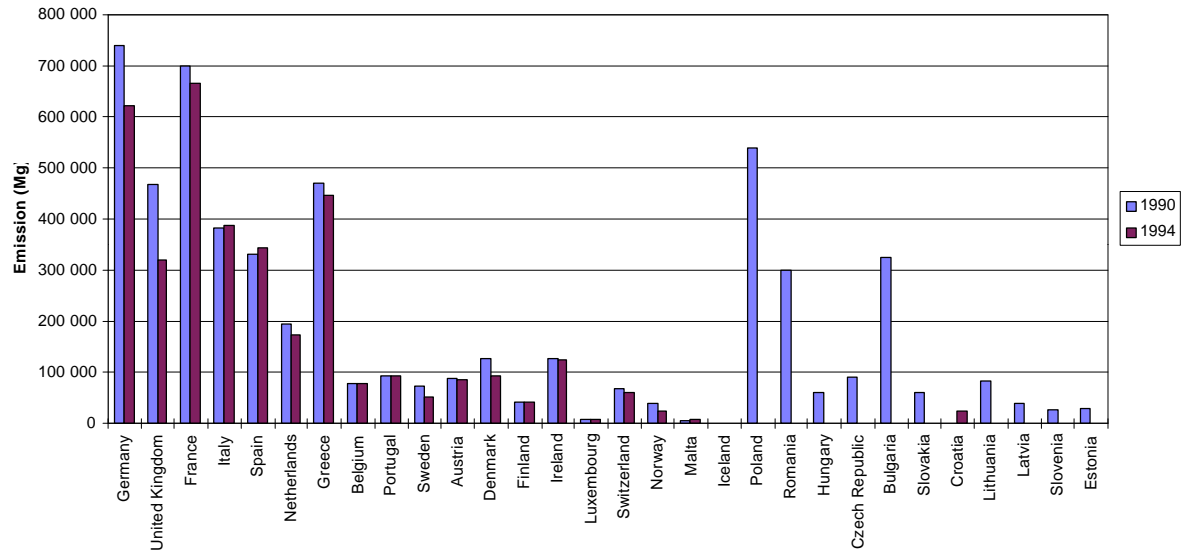
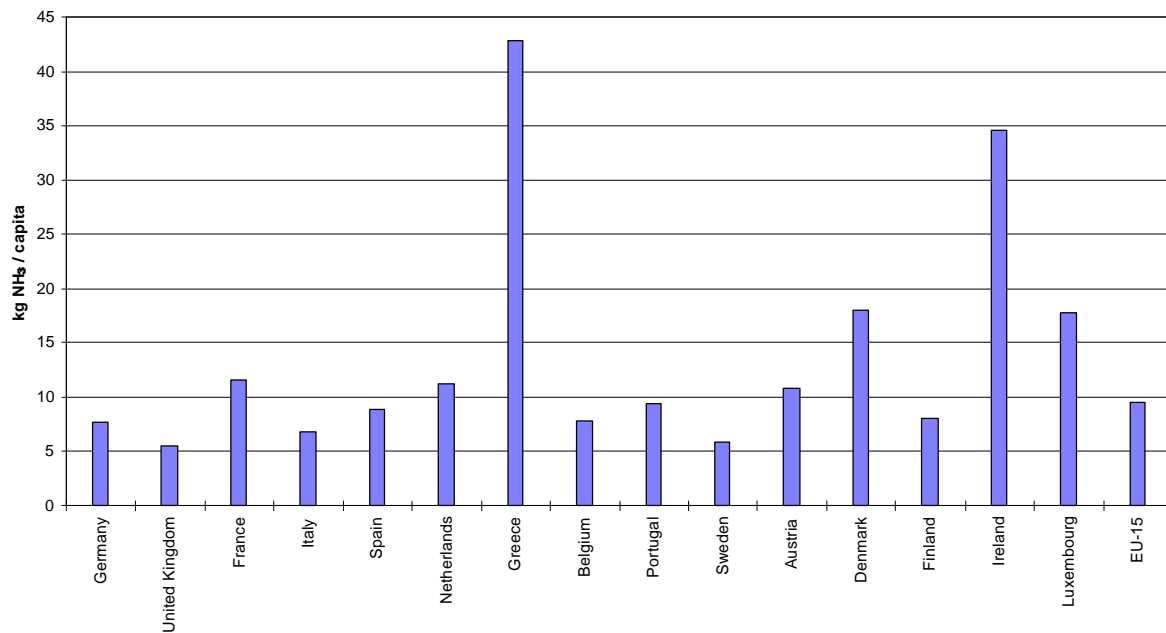
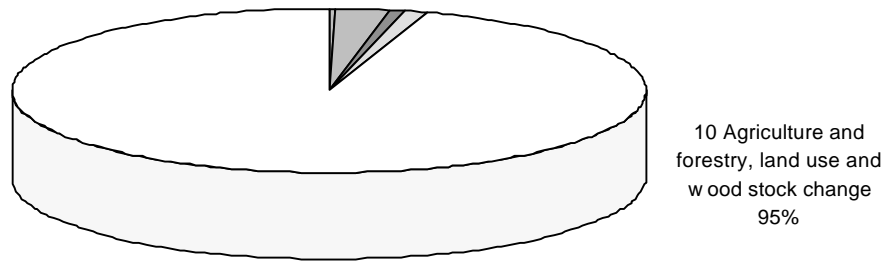


Figure 2.8.2: National total emissions per capita 1994



* CORINAIR 94 and CORINAIR 90 are not fully consistent, but emissions estimates of CORINAIR 90 are shown here to provide a general indicative trend.

Figure 2.8.3: EU-15 main sector split 1994



- 1 Combustion in energy and transformation industries
- 2 Non-industrial combustion plants
- 3 Combustion in manufacturing industry
- 4 Production processes
- 5 Extraction and distrib. of fossil fuels / geothermal energy
- 6 Solvent and other product use
- 7 Road transport
- 8 Other mobile sources and machinery
- 9 Waste treatment and disposal
- 10 Agriculture and forestry, land use and wood stock change

Summary Table 8: Ammonium

CORINAIR 94 / January 1997

	Germany	United Kingdom	France	Italy	Spain	Nether-lands	Greece	Belgium	Portugal	Sweden	Austria	Denmark	Finland	Ireland	Luxem-bourg	EU-15
Emissions in M g NH₃																
1 Combustion in energy and transformation industries	2 632	-	0	99	0	14	0	0	0	372	150	0	0	0	0	3 267
2 Non-industrial combustion plants	340	-	0	2	0	0	0	0	0	214	763	0	0	0	0	1 319
3 Combustion in manufacturing industry	1 187	-	0	72	2	1	1	0	0	244	202	0	0	0	0	1 709
4 Production processes	8 354	20 000	13 558	23 920	10 391	9 693	4 052	2 321	5 335	280	218	0	1 000	0	1 750	100 872
5 Extraction and distrib. of fossil fuels / geothermal energy	-	-	0	0	0	0	0	0	-	0	0	0	0	0	0	0
6 Solvent and other product use	1 044	-	0	0	0	907	0	0	-	0	0	0	0	0	0	1 951
7 Road transport	18 061	-	3 351	751	1 094	132	171	497	421	2 628	3 622	993	0	288	102	32 111
8 Other mobile sources and machinery	-	-	0	35	20	0	6	0	3	11	43	6	0	0	0	124
9 Waste treatment and disposal	-	20 000	1 857	13 586	0	467	0	0	-	0	54	26	0	0	24	36 014
10 Agriculture and forestry, land use and wood stock change	590 900	280 000	648 050	350 483	332 962	161 290	440 968	76 047	86 875	46 825	81 196	92 541	40 000	124 310	5 243	3 357 690
11 Nature	-	0	0	0	0	0	0	12	0	0	535	0	0	0	0	547
Total (excluding Nature)	622 518	320 000	666 816	388 948	344 469	172 000	445 198	78 865	92 634	50 574	86 248	93 566	41 000	124 598	7 119	3 534 553
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	0	-	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2 Non-industrial combustion plants	0	-	0	0	0	0	0	0	0	0	1	0	0	0	0	0
3 Combustion in manufacturing industry	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Production processes	1	6	2	6	3	6	1	3	6	1	0	0	2	0	25	3
5 Extraction and distrib. of fossil fuels / geothermal energy	-	-	0	0	0	0	0	0	-	0	0	0	0	0	0	0
6 Solvent and other product use	0	-	0	0	0	1	0	0	-	0	0	0	0	0	0	0
7 Road transport	3	-	1	0	0	0	0	1	0	5	4	1	0	0	1	1
8 Other mobile sources and machinery	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Waste treatment and disposal	-	6	0	3	0	0	0	0	-	0	0	0	0	0	0	1
10 Agriculture and forestry, land use and wood stock change	95	88	97	90	97	94	99	96	94	93	94	99	98	100	74	95
11 Nature	-	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Emissions in M g NH₃																
1 Combustion in energy and transformation industries	0	0	0	0	-	-	-	-	-	-	12	-	-	-	-	3 279
2 Non-industrial combustion plants	191	0	0	0	-	-	-	-	-	-	2	-	-	-	-	1 512
3 Combustion in manufacturing industry	25	0	0	0	-	-	-	-	-	-	45	-	-	-	-	1 779
4 Production processes	389	303	0	0	-	-	-	-	-	-	2 003	-	-	-	-	103 567
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	0	-	-	-	-	-	-	0	-	-	-	-	0
6 Solvent and other product use	94	0	0	0	-	-	-	-	-	-	0	-	-	-	-	2 045
7 Road transport	2 634	650	2	0	-	-	-	-	-	-	17	-	-	-	-	35 414
8 Other mobile sources and machinery	10	1	0	0	-	-	-	-	-	-	3	-	-	-	-	138
9 Waste treatment and disposal	4 002	0	0	0	-	-	-	-	-	-	0	-	-	-	-	40 016
10 Agriculture and forestry, land use and wood stock change	52 815	23 847	6 368	0	-	-	-	-	-	-	21 871	-	-	-	-	3 462 591
11 Nature	403	0	0	0	-	-	-	-	-	-	7 360	-	-	-	-	8 310
Total (excluding Nature)	60 160	24 801	6 370	0	-	-	-	-	-	-	23 953	-	-	-	-	3 649 837
Emissions as percentage (%)																
1 Combustion in energy and transformation industries	0	0	0	-	-	-	-	-	-	-	0	-	-	-	-	0
2 Non-industrial combustion plants	0	0	0	-	-	-	-	-	-	-	0	-	-	-	-	0
3 Combustion in manufacturing industry	0	0	0	-	-	-	-	-	-	-	0	-	-	-	-	0
4 Production processes	1	1	0	-	-	-	-	-	-	-	8	-	-	-	-	3
5 Extraction and distrib. of fossil fuels / geothermal energy	0	0	0	-	-	-	-	-	-	-	0	-	-	-	-	0
6 Solvent and other product use	0	0	0	-	-	-	-	-	-	-	0	-	-	-	-	0
7 Road transport	4	3	0	-	-	-	-	-	-	-	0	-	-	-	-	1
8 Other mobile sources and machinery	0	0	0	-	-	-	-	-	-	-	0	-	-	-	-	0
9 Waste treatment and disposal	7	0	0	-	-	-	-	-	-	-	0	-	-	-	-	1
10 Agriculture and forestry, land use and wood stock change	88	96	100	-	-	-	-	-	-	-	91	-	-	-	-	95
11 Nature	1	0	0	-	-	-	-	-	-	-	31	-	-	-	-	0
Total	100	100	100	-	-	-	-	-	-	-	100	-	-	-	-	100

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APPENDIX A: STATUS REPORT CORINAIR 94 (APRIL 1997)

Table A.1 reflects the status of data delivered within CORINAIR 94 by April 1997.

Table A.1: Status Report CORINAIR 94, April 1997

COUNTRY	Emission Status	Activity Status	Spatial Status	LPS Status
Austria	A	A	B	A
Belgium	A	A	-	-
Denmark	A	A	A	A
Finland	C	-	-	-
France	A	A	-	-
Germany	B	-	-	-
Greece	A	A	-	-
Ireland	A	A	A	A
Italy	C	-	-	-
Luxembourg	A	A	A	A
Netherlands	B	-	-	-
Portugal	C	-	-	-
Spain	C	-	-	-
Sweden	A	A	A	A
United Kingdom	A	-	-	-
Iceland	A	A	-	-
Liechtenstein	-	-	-	-
Malta	A	A	A	A
Norway	A	A	A	A
Switzerland	A	-	-	-
Bulgaria	-	-	-	-
Croatia	C	-	-	-
Czech Republic	-	-	-	-
Estonia	-	-	-	-
Hungary	-	-	-	-
Latvia	-	-	-	-
Lithuania	-	-	-	-
Poland	-	-	-	-
Romania	-	-	-	-
Slovakia	-	-	-	-
Slovenia	-	-	-	-

Legend:

- A ... very detailed
- B ... detailed
- C ... main elements
- ... no data available

More technically, the status report refers to the following level of detail:

Emissions

The 'emission status' column in table A.1 indicates the level of emission detail submitted by the countries to the European Topic Centre on Air Emissions (ETC/AE). To reach full consistency between UNECE/EMEP and UNFCCC/IPCC reporting formats, emission data on SNAP level 3 are necessary (emission status: A).

- A ... emission estimates on SNAP level 3 (fully detailed)
- B ... emission estimates on SNAP level 2 (detailed)
- C ... emission estimates on SNAP level 1 (main source sectors)

Activity

To allow quality control, the ETC/AE also asked for activity data accompanying the emission data. The 'activity status' column in table C.1 indicates on what level of detail activity data is available.

A	...	activity data on SNAP level 3 (fully detailed)
B	...	activity data on SNAP level 2 (detailed)
C	...	activity data on SNAP level 1 (main source sectors)

Disaggregation

Spatially detailed is requested by the UNECE/EMEP reporting format. The column 'spatial status' reflects on the NUTS-level (standardized nomenclature of territorial units from EUROSTAT) of the submitted emission data.

A	...	emission data on NUTS level 3 (fully detailed)
B	...	emission data on NUTS level 2 (detailed)
C	...	emission data on NUTS level 1 (main country parts)

Point Sources

To allow reporting to the requirements of the Large Combustion Plants Directive (88/609/EEC) the ETC/AE also asked for information on Large Point Sources (LPS). The status of this information is reflected in the column 'LPS status'.

A	...	complete LPS information (emissions, activities, location, stack height, ...)
B	...	emission and activity data for LPS
C	...	emission data only

Country specific footnotes:

France: emission data are provisional. They are not comparable with official figures edited previously especially for the period 1990-1993. The update of the series is in progress.

Germany: heavy metal (HM) emissions data refers to 1995. Emission data for persistent organic pollutants (POP) refers to 1990, former West Germany only.

Netherlands: the national totals are final data; the distribution over the SNAP-codes are preliminary.

Norway: neither managed forests nor natural emissions are reported

Spain: Spanish figures correspond to the latest verified information available (1993).

APPENDIX B: DEFINITION OF POLLUTANTS

Pollutant	Name
SO2	SULPHUR DIOXIDE (SO2+SO3)
NOX	NITROGEN OXIDES (NO+NO2)
NM VOC	NON METHANE VOLATILE ORGANIC COMPOUNDS
CH4	METHANE
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
N2O	NITROUS OXIDE
NH3	AMMONIA
As	ARSENIC and derived solid or gaseous comp.
Cd	CADMIUM and derived solid or gaseous comp.
Cr	CHROMIUM and derived solid or gaseous comp.
Cu	COPPER and derived solid or gaseous compounds
Hg	MERCURY and derived solid or gaseous comp.
Ni	NICKEL and derived solid or gaseous compounds
Pb	LEAD and derived solid or gaseous compounds
Se	SELENIUM and derived solid or gaseous comp.
Zn	ZINC and derived solid or gaseous compounds
HCH	HEXACHLOROCYCLOHEXANE
PCP	PENTACHLOROPHENOL
HCB	HEXACHLOROBENZENE
TCM	TETRACHLOROMETHANE
TRI	TRICHLOROETHYLENE
PER	TETRACHLOROETHYLENE
TCB	TRICHLOROBENZENE
TCE	TRICHLOROETHANE
DIOX	DIOXINS AND FURANS
PAH	POLYCYCLIC AROMATIC HYDROCARBONS

APPENDIX C: SNAP94 EMISSION GENERATING ACTIVITY LIST (SELECTED NOMENCLATURE FOR EMISSION SOURCES OF AIR POLLUTION)

SNAP94	SNAP94 name
01	COMBUSTION IN ENERGY AND TRANSFORMATION INDUSTRIES
010100	PUBLIC POWER
010101	PUBLIC POWER - COMBUSTION PLANTS >= 300 MW (boilers)
010102	PUBLIC POWER - COMBUSTION PLANTS >= 50 AND < 300 MW (boilers)
010103	PUBLIC POWER - COMBUSTION PLANTS < 50 MW (boilers)
010104	PUBLIC POWER - GAS TURBINES
010105	PUBLIC POWER - STATIONARY ENGINES
010200	DISTRICT HEATING PLANTS
010201	DISTRICT HEAT. - COMBUSTION PLANTS >= 300 MW (boilers)
010202	DISTRICT HEAT. - COMB. PLANTS >= 50 MW AND < 300 MW (boil.)
010203	DISTRICT HEAT. - COMBUSTION PLANTS < 50 MW (boilers)
010204	DISTRICT HEAT. - GAS TURBINES
010205	DISTRICT HEAT. - STATIONARY ENGINES
010300	PETROLEUM REFINING PLANTS
010301	PETROLEUM REF. - COMBUSTION PLANTS >=300 MW (boilers)
010302	PETROLEUM REF. - COMB. PLANTS >= 50 MW AND < 300 MW (boil.)
010303	PETROLEUM REF. - COMBUSTION PLANTS < 50 MW (boilers)
010304	PETROLEUM REF. - GAS TURBINES
010305	PETROLEUM REF. - STATIONARY ENGINES
010306	PETROLEUM REF. - PROCESS FURNACES
010400	SOLID FUEL TRANSFORMATION PLANTS
010401	SOLID FUEL TRANS. - COMBUSTION PLANTS >= 300 MW (boilers)
010402	SOLID FUEL TRANS. - COMB. PLANTS >= 50 AND < 300 MW (boil.)
010403	SOLID FUEL TRANS. - COMBUSTION PLANTS < 50 MW (boilers)
010404	SOLID FUEL TRANS. - GAS TURBINES
010405	SOLID FUEL TRANS. - STATIONARY ENGINES
010406	SOLID FUEL TRANS. - COKE OVEN FURNACES
010407	OTHER (Coalgasification, liquefaction, etc.)
010500	COAL MINING, OIL/GAS EXTRACTION, PIPELINE COMPRESSORS
010501	COAL/OIL/GAS EXT. - COMBUSTION PLANTS >= 300 MW (boilers)
010502	COAL/OIL/GAS EXT. - COMB. PLANTS >= 50 AND < 300 MW (boil.)
010503	COAL/OIL/GAS EXT. - COMBUSTION PLANTS < 50 MW (boilers)
010504	COAL/OIL/GAS EXT. - GAS TURBINES
010505	COAL/OIL/GAS EXT. - STATIONARY ENGINES
010506	COAL/OIL/GAS EXT. - PIPELINE COMPRESSORS
02	NON-INDUSTRIAL COMBUSTION PLANTS
020100	COMMERCIAL AND INSTITUTIONAL PLANTS
020101	COMM./INSTIT. - COMBUSTION PLANTS >= 300 MW (boilers)
020102	COMM./INSTIT. - COMBUST. PLANTS >= 50 AND < 300 MW (boilers)
020103	COMM./INSTIT. - COMBUSTION PLANTS < 50 MW (boilers)
020104	COMM./INSTIT. - STATIONARY GAS TURBINES
020105	COMM./INSTIT. - STATIONARY ENGINES
020106	COMM./INSTIT. - OTHER STATIONARY EQUIPMENTS
020200	RESIDENTIAL PLANTS
020201	RESIDENTIAL - COMBUSTION PLANTS >= 50 MW (boilers)
020202	RESIDENTIAL - COMBUSTION PLANTS < 50 MW (boilers)
020203	RESIDENTIAL - GAS TURBINES
020204	RESIDENTIAL - STATIONARY ENGINES
020205	RESIDENTIAL - OTHER EQUIPMENTS (stoves, fireplaces, cooking...)
020300	PLANTS IN AGRICULTURE, FORESTRY AND AQUACULTURE
020301	AGRIC./FORES./AQUA. - COMBUSTION PLANTS >= 50 MW (boilers)
020302	AGRIC./FORES./AQUA. - COMBUSTION PLANTS < 50 MW (boilers)
020303	AGRIC./FORES./AQUA. - STATIONARY GAS TURBINES
020304	AGRIC./FORES./AQUA. - STATIONARY ENGINES

020305	AGRIC./FORES./AQUA. - OTHER STATIONARY EQUIPMENTS
03	COMBUSTION IN MANUFACTURING INDUSTRY
030100	COMB. MANU. IND.- COMB. IN BOILER/GAS TURB./STATION. ENGINE
030101	COMB. MANU. IND.- COMBUSTION PLANTS >= 300 MW (boilers)
030102	COMB. MANU. IND.- COMBUSTION PLANTS >= 50 &< 300MW (boilers)
030103	COMB. MANU. IND.- COMBUSTION PLANTS < 50 MW (boilers)
030104	COMB. MANU. IND.- GAS TURBINES
030105	COMB. MANU. IND.- STATIONARY ENGINES
030106	COMB. MANU. IND.- OTHER STATIONARY EQUIPMENTS
030200	COMB. MANU. IND.- PROCESS FURNACES WITHOUT CONTACT
030203	COMB. MANU. IND.- BLAST FURNACE COWPERS
030204	COMB. MANU. IND.- PLASTER FURNACES
030205	COMB. MANU. IND.- OTHER FURNACES
030300	COMB. MANU. IND.- PROCESSES WITH CONTACT
030301	COMB. MANU. IND.- SINTER PLANTS
030302	COMB. MANU. IND.- REHEATING FURNACES STEEL AND IRON
030303	COMB. MANU. IND.- GRAY IRON FOUNDRIES
030304	COMB. MANU. IND.- PRIMARY LEAD PRODUCTION
030305	COMB. MANU. IND.- PRIMARY ZINC PRODUCTION
030306	COMB. MANU. IND.- PRIMARY COPPER PRODUCTION
030307	COMB. MANU. IND.- SECONDARY LEAD PRODUCTION
030308	COMB. MANU. IND.- SECONDARY ZINC PRODUCTION
030309	COMB. MANU. IND.- SECONDARY COPPER PRODUCTION
030310	COMB. MANU. IND.- SECONDARY ALUMINIUM PRODUCTION
030311	COMB. MANU. IND.- CEMENT (except carbon. in 040612)
030312	COMB. MANU. IND.- LIME (except carb. in 040614)
030313	COMB. MANU. IND.- ASPHALT CONCRETE PLANTS
030314	COMB. MANU. IND.- FLAT GLASS (except carb. in 040613)
030315	COMB. MANU. IND.- CONTAINER GLASS (except carb. in 040613)
030316	COMB. MANU. IND.- GLASS WOOL (except binding carb. 040613)
030317	COMB. MANU. IND.- OTHER GLASS (except carb. in 040613)
030318	COMB. MANU. IND.- MINERAL WOOL (except binding)
030319	COMB. MANU. IND.- BRICKS AND TILES
030320	COMB. MANU. IND.- FINE CERAMICS MATERIALS
030321	COMB. MANU. IND.- PAPER MILL INDUSTRY (drying processes)
030322	COMB. MANU. IND.- ALUMINA PRODUCTION
030323	COMB. MANU. IND.- MAGNESIUM PRODUCTION (dolomite treatment)
030324	COMB. MANU. IND.- NICKEL PRODUCTION (thermal process)
030325	COMB. MANU. IND.- ENAMEL PRODUCTION
030326	COMB. MANU. IND.- OTHER
04	PRODUCTION PROCESSES
040100	PROCESSES IN PETROLEUM INDUSTRIES
040101	PETROLEUM PRODUCTS PROCESSING
040102	PETROL. PROD. PROCESS.- FLUID CATALYTIC CRACKING - CO BOILER
040103	PETROL. PROD. PROCESS.- SULPHUR RECOVERY PLANTS
040104	STORAGE AND HANDLING OF PETROLEUM PRODUCTS IN REFINERY
040105	PROCESSES IN PETROLEUM INDUSTRIES - OTHER
040200	PROCESSES IN IRON AND STEEL INDUSTRIES AND COLLIERIES
040201	IRON/STEEL & COLLIERY - COKE OVEN (door leakage & extinction)
040202	IRON/STEEL & COLLIERY - BLAST FURNACE CHARGING
040203	IRON/STEEL & COLLIERY - PIG IRON TAPPING
040204	IRON/STEEL & COLLIERY - SOLID SMOKELESS FUEL
040205	IRON/STEEL & COLLIERY - OPEN HEARTH FURNACE STEEL PLANT
040206	IRON/STEEL & COLLIERY - BASIC OXYGEN FURNACE STEEL PLANT
040207	IRON/STEEL & COLLIERY - ELECTRIC FURNACE STEEL PLANT
040208	IRON/STEEL & COLLIERY - ROLLING MILLS
040209	IRON/STEEL & COLLIERY - SINTER PLANT (except comb. in 030301)
040210	IRON/STEEL & COLLIERY - OTHER
040300	PROCESSES IN NON-FERROUS METAL INDUSTRIES
040301	NON-FERROUS METAL - ALUMINIUM PRODUCTION (electrolysis)
040302	NON-FERROUS METAL - FERRO ALLOYS
040303	NON-FERROUS METAL - SILICIUM PRODUCTION
040304	NON-FERROUS METAL - MAGNESIUM PROD. (except 030323)

040305	NON-FERROUS METAL- NICKEL PROD.(extherm. proc. in 030324)
040306	NON-FERROUS METAL - ALLIED METAL MANUFACTURING
040307	NON-FERROUS METAL - GALVANIZING
040308	NON-FERROUS METAL - ELECTROPLATING
040309	NON-FERROUS METAL - OTHER
040400	PROCESSES IN INORGANIC CHEMICAL INDUSTRIES
040401	INORGANIC CHEMICAL - SULFURIC ACID
040402	INORGANIC CHEMICAL - NITRIC ACID
040403	INORGANIC CHEMICAL - AMMONIA
040404	INORGANIC CHEMICAL - AMMONIUM SULPHATE
040405	INORGANIC CHEMICAL - AMMONIUM NITRATE
040406	INORGANIC CHEMICAL - AMMONIUM PHOSPHATE
040407	INORGANIC CHEMICAL - NPK FERTILISERS
040408	INORGANIC CHEMICAL - UREA
040409	INORGANIC CHEMICAL - CARBON BLACK
040410	INORGANIC CHEMICAL - TITANIUM DIOXIDE
040411	INORGANIC CHEMICAL - GRAPHITE
040412	INORGANIC CHEMICAL - CALCIUM CARBIDE PRODUCTION
040413	INORGANIC CHEMICAL - CHLORINE PRODUCTION
040414	INORGANIC CHEMICAL - PHOSPHATE FERTILIZERS
040415	STORAGE AND HANDLING OF INORGANIC CHEMICAL PRODUCTS
040416	INORGANIC CHEMICAL - OTHER
040500	PROCESSES IN ORGANIC CHEMICAL INDUSTRIES (bulk production)
040501	ORGANIC CHEMICAL - ETHYLENE
040502	ORGANIC CHEMICAL - PROPYLENE
040503	ORGANIC CHEMICAL - 1,2 DICHLOROETHANE (except 040505)
040504	ORGANIC CHEMICAL - VINYLCHLORIDE (except 040505)
040505	ORG.CHEM.- 1,2 DICHLOROETHANE+VINYLCHLORIDE (balanpedc.)
040506	ORGANIC CHEMICAL - POLYETHYLENE LOW DENSITY
040507	ORGANIC CHEMICAL - POLYETHYLENE HIGH DENSITY
040508	ORGANIC CHEMICAL - POLYVINYLCHLORIDE
040509	ORGANIC CHEMICAL - POLYPROPYLENE
040510	ORGANIC CHEMICAL - STYRENE
040511	ORGANIC CHEMICAL - POLYSTYRENE
040512	ORGANIC CHEMICAL - STYRENE BUTADIENE
040513	ORGANIC CHEMICAL - STYRENE-BUTADIENE LATEX
040514	ORGANIC CHEMICAL - STYRENE-BUTADIENE RUBBER (SBR)
040515	ORGANIC CHEMICAL.- ACRYLONITRILE BUTADIENE STYRENE (ABS)RESINS
040516	ORGANIC CHEMICAL - ETHYLENE OXYDE
040517	ORGANIC CHEMICAL - FORMALDEHYDE
040518	ORGANIC CHEMICAL - ETHYLBENZENE
040519	ORGANIC CHEMICAL - PHTALIC ANHYDRIDE
040520	ORGANIC CHEMICAL - ACRYLONITRILE
040521	ORGANIC CHEMICAL - ADIPIC ACID
040522	ORGANIC CHEMICAL - STORAGE AND HANDLING OF ORG. CHEMI. PROD.
040523	ORGANIC CHEMICAL - GLYOXYLIC ACID
040524	ORGANIC CHEMICAL - HALOGENATED HYDROCARBONS PRODUCTION
040525	ORGANIC CHEMICAL - PESTICIDE PRODUCTION
040526	ORGANIC CHEMICAL - PRODUCTION OF PERSISTENT ORGA. COMPOUNDS
040527	ORGANIC CHEMICAL - OTHER (phytosanitary, ...)
040600	PROC. IN WOOD, PAPER PULP, FOOD, DRINK AND OTHER INDUSTRIES
040601	OTHER PROCESSES - CHIPBOARD
040602	OTHER PROCESSES - PAPER PULP (kraft process)
040603	OTHER PROCESSES - PAPER PULP (acidlignite process)
040604	OTHER PROC.-PAPER PULP (neutral sulphite/semi-chemical pro.)
040605	OTHER PROCESSES - BREAD
040606	OTHER PROCESSES - WINE
040607	OTHER PROCESSES - BEER
040608	OTHER PROCESSES - SPIRITS
040610	OTHER PROCESSES - ROOF COVERING WITH ASPHALT MATERIALS
040611	OTHER PROCESSES - ROAD PAVING WITH ASPHALT
040612	OTHER PROCESSES - CEMENT (carbonizing)
040613	OTHER PROCESSES - GLASS (carbonizing)

040614	OTHER PROCESSES - LIME (decarbonizing)
040615	OTHER PROCESSES - BATTERIES MANUFACTURING
040616	OTHER PROCESSES - EXTRACTION OF MINERAL ORES
040617	OTHER PROCESSES - OTHER (including graphite production)
040700	COOLING PLANTS
05	EXTRACTION AND DISTRIBUTION OF FOSSIL FUELS/GEOTHERMAL ENERGY
050100	EXTRACTION AND 1ST TREATMENT OF SOLID FOSSIL FUELS
050101	EXTRACTION OF SOLID FOSSIL FUELS - OPEN CAST MINING
050102	EXTRACTION OF SOLID FOSSIL FUELS - UNDERGROUND MINING
050103	EXTRACTION OF SOLID FOSSIL FUELS - STORAGE OF SOLID FUELS
050200	EXTRACTION, 1ST TREAT. AND LOADING OF LIQUID FOSSIL FUELS
050201	EXTRACTION OF LIQUID FOSSIL FUELS - LAND-BASED ACTIVITIES
050202	EXTRACTION OF LIQUID FOSSIL FUELS - OFF-SHORE ACTIVITIES
050300	EXTRACTION, 1ST TREAT. AND LOADING OF GASEOUS FOSSIL FUELS
050301	EXTRACTION OF GASEOUS FOSSIL FUELS- LAND-BASED DESULFURATION
050302	EXTRACTION OF GAS - LAND-BASED ACTIV. (other than desulfur.)
050303	EXTRACTION OF GASEOUS FOSSIL FUELS - OFF-SHORE ACTIVITIES
050400	LIQUID FUEL DISTRIBUTION (except gasoline distrib. in 0505)
050401	LIQUID FUEL DIST.-MARINE TERMINALS (tank handl. & stor.)
050402	LIQUID FUEL DIST.-OTHER HANDLING AND STORAGE (pipeline)
050500	GASOLINE DISTRIBUTION
050501	GASOLINE DISTRIBUTION - REFINERY DISPATCH STATION
050502	GASOLINE DIST.-TRANSPORTS & DEPOTS (except service stations)
050503	GASOLINE DIST. - SERVICE STATIONS (incl. refuelling of cars)
050600	GAS DISTRIBUTION NETWORKS
050601	GAS DISTRIB.-PIPELINES (except compressor station in 010506)
050603	GAS DISTRIBUTION - DISTRIBUTION NETWORKS
050700	GEOTHERMAL ENERGY EXTRACTION
06	SOLVENT AND OTHER PRODUCT USE
060100	PAINT APPLICATION
060101	PAINT APPLICATION - MANUFACTURE OF AUTOMOBILES
060102	PAINT APPLICATION - CAR REPAIRING
060103	PAINT APPLICATION - CONSTRUCTION AND BUILDINGS (exc.060107)
060104	PAINT APPLICATION - DOMESTIC USE (except 060107)
060105	PAINT APPLICATION - COIL COATING
060106	PAINT APPLICATION - BOAT BUILDING
060107	PAINT APPLICATION - WOOD
060108	OTHER INDUSTRIAL PAINT APPLICATION
060109	OTHER NON INDUSTRIAL PAINT APPLICATION
060200	DEGREASING, DRY CLEANING AND ELECTRONICS
060201	METAL DEGREASING
060202	DRY CLEANING
060203	ELECTRONIC COMPONENTS MANUFACTURING
060204	OTHER INDUSTRIAL CLEANING
060300	CHEMICALS PRODUCTS MANUFACTURING OR PROCESSING
060301	POLYESTER PROCESSING
060302	POLYVINYLCHLORIDE PROCESSING
060303	POLYURETHANE PROCESSING
060304	POLYSTYRENE FOAM PROCESSING
060305	RUBBER PROCESSING
060306	PHARMACEUTICAL PRODUCTS MANUFACTURING
060307	PAINTS MANUFACTURING
060308	INKS MANUFACTURING
060309	GLUES MANUFACTURING
060310	ASPHALT BLOWING
060311	ADHESIVE, MAGNETIC TAPES, FILMS AND PHOTOGRAPHS MANUFACT.
060312	TEXTILE FINISHING
060313	LEATHER TANNING
060314	CHEMICALS PRODUCTS MANUFACTURING OR PROCESSING - OTHER
060400	OTHER USE OF SOLVENTS AND RELATED ACTIVITIES
060401	GLASS WOOL ENDUCTION
060402	MINERAL WOOL ENDUCTION
060403	PRINTING INDUSTRY

060404	FAT EDIBLE AND NON EDIBLE OIL EXTRACTION
060405	APPLICATION OF GLUES AND ADHESIVES
060406	PRESERVATION OF WOOD
060407	UNDERSEAL TREATMENT AND CONSERVATION OF VEHICLES
060408	DOMESTIC SOLVENT USE (other than paint application)
060409	VEHICLES DEWAXING
060410	PHARMACEUTICAL PRODUCTS MANUFACTURING
060411	DOMESTIC USE OF PHARMACEUTICAL PRODUCTS
060412	OTHER (preservation of seeds, ...)
060500	USE OF N2O
060501	USE OF N2O FOR ANAESTHESIA
060502	OTHER USE OF N2O
07	ROAD TRANSPORT
070100	PASSENGER CARS
070101	PASSENGER CARS - HIGHWAY DRIVING
070102	PASSENGER CARS - RURAL DRIVING
070103	PASSENGER CARS - URBAN DRIVING
070200	LIGHT DUTY VEHICLES < 3.5 t
070201	LIGHT DUTY VEHICLES < 3.5 t - HIGHWAY DRIVING
070202	LIGHT DUTY VEHICLES < 3.5 t - RURAL DRIVING
070203	LIGHT DUTY VEHICLES < 3.5 t - URBAN DRIVING
070300	HEAVY DUTY VEHICLES > 3.5 t AND BUSES
070301	HEAVY DUTY VEHICLES > 3.5 t AND BUSES - HIGHWAY DRIVING
070302	HEAVY DUTY VEHICLES > 3.5 t AND BUSES - RURAL DRIVING
070303	HEAVY DUTY VEHICLES > 3.5 t AND BUSES - URBAN DRIVING
070400	MOPEDS AND MOTORCYCLES < 50 CM3
070500	MOTORCYCLES > 50 CM3
070501	MOTORCYCLES > 50 CM3 - HIGHWAY DRIVING
070502	MOTORCYCLES > 50 CM3 - RURAL DRIVING
070503	MOTORCYCLES > 50 CM3 - URBAN DRIVING
070600	GASOLINE EVAPORATION FROM VEHICLES
070700	AUTOMOBILE TYRE AND BRAKE WEAR
08	OTHER MOBILE SOURCES AND MACHINERY
080100	OTHER MOBILE & MACH.- MILITARY
080200	OTHER MOBILE & MACH.- RAILWAYS
080201	OTHER MOBILE & MACH.- SHUNTING LOCS
080202	OTHER MOBILE & MACH.- RAIL-CARS
080203	OTHER MOBILE & MACH.- LOCOMOTIVES
080300	OTHER MOBILE & MACH.- INLAND WATERWAYS
080301	OTHER MOBILE & MACH.- SAILING BOATS WITH AUXILLIARY ENGINES
080302	OTHER MOBILE & MACH.- MOTORBOATS / WORKBOATS
080303	OTHER MOBILE & MACH.- PERSONAL WATERCRAFT
080304	OTHER MOBILE & MACH.- INLAND GOODS CARRYING VESSELS
080400	OTHER MOBILE & MACH.- MARITIME ACTIVITIES
080402	OTHER MOBILE & MACH.- NATIONAL SEA TRAFFIC WITHIN EMEP AREA
080403	OTHER MOBILE & MACH.- NATIONAL FISHING
080404	OTHER MOBILE & MACH.- INTERNATIONAL SEA TRAFFIC (tankers)
080500	OTHER MOBILE & MACH.- AIR TRAFFIC
080501	OTHER MOBILE & MACH.- DOM. AIRPORT TRAFFIC(LTO cycles<1000m)
080502	OTHER MOBILE & MACH.-INTERN. AIRPORT TRAF.(LTO cycles<1000m)
080503	OTHER MOBILE & MACH.- DOMESTIC CRUISE TRAFFIC (> 1000 m)
080504	OTHER MOBILE & MACH.- INTERNATIONAL CRUISE TRAFFIC(> 1000 m)
080600	OTHER MOBILE & MACH.- AGRICULTURE
080700	OTHER MOBILE & MACH.- FORESTRY
080800	OTHER MOBILE & MACH.- INDUSTRY
080900	OTHER MOBILE & MACH.- HOUSEHOLD AND GARDENING
081000	OTHER MOBILE & MACH.- OTHER OFF-ROAD
09	WASTE TREATMENT AND DISPOSAL
090200	WASTE INCINERATION
090201	INCINERATION OF DOMESTIC OR MUNICIPAL WASTES
090202	INCINERATION OF INDUSTRIAL WASTES (except flaring)
090203	FLARING IN OIL REFINERY
090204	FLARING IN CHEMICAL INDUSTRIES

090205	INCINERATION OF SLUDGES FROM WASTE WATER TREATMENT
090206	FLARING IN GAS AND OIL EXTRACTION
090207	INCINERATION OF HOSPITAL WASTES
090208	INCINERATION OF WASTE OIL
090700	OPEN BURNING OF AGRICULTURAL WASTES (except on field 100300)
090900	CREMATION
090901	INCINERATION OF CORPSES
090902	INCINERATION OF CARCASSES
091000	OTHER WASTE TREATMENT
091001	WASTE WATER TREATMENT IN INDUSTRY
091002	WASTE WATER TREATMENT IN RESIDENTIAL AND COMMERCIAL SECTORS
091003	SLUDGE SPREADING
091004	LAND FILLING
091005	COMPOST PRODUCTION FROM WASTE
091006	BIOGAS PRODUCTION
091007	LATRINES
091008	REFUSE DERIVED FUEL PRODUCTION
10	AGRIULTURE AND FORESTRY, LAND USE AND WOODSTOCK CHANGE (LUWC)
100100	CULTURES WITH FERTILIZERS (except animal manure)
100101	CULTURE WITH FERTILIZERS - PERMANENT CROPS
100102	CULTURE WITH FERTILIZERS - ARABLE LAND CROPS
100103	CULTURE WITH FERTILIZERS - RICE FIELD
100104	CULTURE WITH FERTILIZERS - MARKET GARDENING
100105	CULTURE WITH FERTILIZERS - GRASSLAND
100106	CULTURE WITH FERTILIZERS - FALLOWS
100200	CULTURES WITHOUT FERTILIZERS
100201	CULTURE WITHOUT FERTILIZERS - PERMANENT CROPS
100202	CULTURE WITHOUT FERTILIZERS - ARABLE LAND CROPS
100203	CULTURE WITHOUT FERTILIZERS - RICE FIELD
100204	CULTURE WITHOUT FERTILIZERS - MARKET GARDENING
100205	CULTURE WITHOUT FERTILIZERS - GRASSLAND
100206	CULTURE WITHOUT FERTILIZERS - FALLOWS
100300	ON-FIELD BURNING OF STUBBLE, STRAW, ...
100400	ENTERIC FERMENTATION
100401	ENTERIC FERMENTATION - DAIRY COWS
100402	ENTERIC FERMENTATION - OTHER CATTLE
100403	ENTERIC FERMENTATION - OVINES
100404	ENTERIC FERMENTATION - FATTENING PIGS
100405	ENTERIC FERMENTATION - HORSES
100406	ENTERIC FERMENTATION - MULES AND ASSES
100407	ENTERIC FERMENTATION - GOATS
100408	ENTERIC FERMENTATION - LAYING HENS
100409	ENTERIC FERMENTATION - BROILERS
100410	ENTERIC FERMENTATION - OTHER POULTRY (ducks, geoses, etc.)
100411	ENTERIC FERMENTATION - FUR ANIMALS
100412	ENTERIC FERMENTATION - SOWS
100413	ENTERIC FERMENTATION - CAMELS
100414	ENTERIC FERMENTATION - BUFFALO
100415	ENTERIC FERMENTATION - OTHER
100500	MANURE MANAGEMENT
100501	MANURE MANAGEMENT - DAIRY COWS
100502	MANURE MANAGEMENT - OTHER CATTLE
100503	MANURE MANAGEMENT - FATTENING PIGS
100504	MANURE MANAGEMENT - SOWS
100505	MANURE MANAGEMENT - OVINES
100506	MANURE MANAGEMENT - HORSES
100507	MANURE MANAGEMENT - LAYING HENS
100508	MANURE MANAGEMENT - BROILERS
100509	MANURE MANAGEMENT - OTHER POULTRY (ducks, geoses, etc.)
100510	MANURE MANAGEMENT - FUR ANIMALS
100511	MANURE MANAGEMENT - GOATS
100512	MANURE MANAGEMENT - MULES AND ASSES
100513	MANURE MANAGEMENT - CAMELS

100514	MANURE MANAGEMENT - BUFFALO
100515	MANURE MANAGEMENT - OTHER
100600	USE OF PESTICIDES
100700	MANAGED DECIDUOUS FORESTS
100701	MANAGED DECIDUOUS FORESTS - HIGH ISOPRENE EMITTERS
100702	MANAGED DECIDUOUS FORESTS - LOW ISOPRENE EMITTERS
100703	MANAGED DECIDUOUS FORESTS - NON ISOPRENE EMITTERS
100800	MANAGED CONIFEROUS FORESTS
101100	LUWC - WOOD BIOMASS STOCK CHANGE/ANNUAL GROWTH
101101	LUWC-WOOD STOCK/GROWTH - TROPICAL FORESTS/PLANTATIONS
101102	LUWC-WOOD STOCK/GROWTH-TROPICAL FORESTS/OTHER MANAGED FOREST
101103	LUWC-WOOD STOCK/GROWTH - TROPICAL FORESTS/OTHER
101104	LUWC-WOOD STOCK/GROWTH - TEMPERATE FORESTS/PLANTATIONS
101105	LUWC-WOOD STOCK/GROWTH - TEMPERATE FORESTS/COMMERCIAL
101106	LUWC-WOOD STOCK/GROWTH - TEMPERATE FORESTS/OTHER
101107	LUWC-WOOD STOCK/GROWTH - BOREAL FORESTS
101108	LUWC-WOOD STOCK/GROWTH - OTHER ECOSYSTEM TYPES
101109	LUWC-WOOD STOCK/GROWTH - NON-FOREST TREES
101200	LUWC - WOOD BIOMASS STOCK CHANGE/ANNUAL HARVEST
101201	LUWC-WOOD STOCK/HARVEST - BIOMASS IN COMMERCIAL HARVEST
101202	LUWC-WOOD STOCK/HARVEST - TRADITIONAL FUELWOOD CONSUMED
101203	LUWC-WOOD STOCK/HARVEST - OTHER WOOD USE
101300	LUWC - CONVERSION/BURNING ABOVEGROUND BIOMASS
101301	LUWC-CONVERSION/BIOMASS BURNING - TROPICAL FORESTS ON SITE
101302	LUWC-CONVERSION/BIOMASS BURNING - TROPICAL FORESTS OFF SITE
101303	LUWC-CONVERSION/BIOMASS BURNING - TEMPERATE FORESTS ON SITE
101304	LUWC-CONVERSION/BIOMASS BURNING - TEMPERATE FORESTS OFF SITE
101305	LUWC-CONVERSION/BIOMASS BURNING - BOREAL FORESTS ON SITE
101306	LUWC-CONVERSION/BIOMASS BURNING - BOREAL FORESTS OFF SITE
101307	LUWC-CONVERSION/BIOMASS BURNING - GRASSLAND ON SITE
101308	LUWC-CONVERSION/BIOMASS BURNING - GRASSLAND OFF SITE
101309	LUWC-CONVERSION/BIOMASS BURNING - OTHER ON SITE
101310	LUWC-CONVERSION/BIOMASS BURNING - OTHER OFF SITE
101400	LUWC - CONVERSION/ABOVEGROUND BIOMASS DECAY
101401	LUWC-CONVERSION/BIOMASS DECAY - TROPICAL FORESTS
101402	LUWC-CONVERSION/BIOMASS DECAY - TEMPERATE FORESTS
101403	LUWC-CONVERSION/BIOMASS DECAY - BOREAL FORESTS
101404	LUWC-CONVERSION/BIOMASS DECAY - GRASSLAND
101405	LUWC-CONVERSION/BIOMASS DECAY - OTHER
101500	LUWC - CONVERSION/SOIL CARBON RELEASE
101501	LUWC-CONVERSION/SOIL CARBON RELEASE - TROPICAL FORESTS
101502	LUWC-CONVERSION/SOIL CARBON RELEASE - TEMPERATE FORESTS
101503	LUWC-CONVERSION/SOIL CARBON RELEASE - BOREAL FORESTS
101504	LUWC-CONVERSION/SOIL CARBON RELEASE - GRASSLAND
101505	LUWC-CONVERSION/SOIL CARBON RELEASE - OTHER
101600	LUWC - MANAGED LAND ABANDONMENT< 20y/ABOVEGROUND BIOMASS
101601	LUWC-LAND ABAND.<20y/ABOVEGROUND BIOMASS - TROPICAL FORESTS
101602	LUWC-LAND ABAND.<20y/ABOVEGROUND BIOMASS - TEMPERATE FORESTS
101603	LUWC-LAND ABAND.<20y/ABOVEGROUND BIOMASS - BOREAL FORESTS
101604	LUWC-LAND ABAND.<20y/ABOVEGROUND BIOMASS - GRASSLAND
101605	LUWC-LAND ABAND.<20y/ABOVEGROUND BIOMASS - OTHER
101700	LUWC - MANAGED LAND ABANDONMENT< 20y/SOIL CARBON UPTAKE
101701	LUWC-LAND ABAND.<20y/SOIL CARBON UPTAKE - TROPICAL FORESTS
101702	LUWC-LAND ABAND.<20y/SOIL CARBON UPTAKE - TEMPERATE FORESTS
101703	LUWC-LAND ABAND.<20y/SOIL CARBON UPTAKE - BOREAL FORESTS
101704	LUWC-LAND ABAND.<20y/SOIL CARBON UPTAKE - GRASSLAND
101705	LUWC-LAND ABAND.<20y/SOIL CARBON UPTAKE - OTHER
101800	LUWC - MANAGED LAND ABANDONMENT> 20y/ABOVEGROUND BIOMASS
101801	LUWC-LAND ABAND.>20y/ABOVEGROUND BIOMASS - TROPICAL FORESTS
101802	LUWC-LAND ABAND.>20y/ABOVEGROUND BIOMASS - TEMPERATE FORESTS
101803	LUWC-LAND ABAND.>20y/ABOVEGROUND BIOMASS - BOREAL FORESTS
101804	LUWC-LAND ABAND.>20y/ABOVEGROUND BIOMASS - GRASSLAND
101805	LUWC-LAND ABAND.>20y/ABOVEGROUND BIOMASS - OTHER

101900	LUWC - MANAGED LAND ABANDONMENT> 20y/SOIL CARBON UPTAKE
101901	LUWC-LAND ABAND.>20y/SOIL CARBON UPTAKE - TROPICAL FORESTS
101902	LUWC-LAND ABAND.>20y/SOIL CARBON UPTAKE - TEMPERATE FORESTS
101903	LUWC-LAND ABAND.>20y/SOIL CARBON UPTAKE - BOREAL FORESTS
101904	LUWC-LAND ABAND.>20y/SOIL CARBON UPTAKE - GRASSLAND
101905	LUWC-LAND ABAND.>20y/SOIL CARBON UPTAKE - OTHER
11	NATURE
110100	NON-MANAGED DECIDUOUS FORESTS
110101	NON-MANAGED DECIDUOUS FORESTS - HIGH ISOPRENE EMITTERS
110102	NON-MANAGED DECIDUOUS FORESTS - LOW ISOPRENE EMITTERS
110103	NON-MANAGED DECIDUOUS FORESTS - NON ISOPRENE EMITTERS
110200	NON-MANAGED CONIFEROUS FORESTS
110300	FOREST FIRES
110400	NATURAL GRASSLAND
110500	WETLANDS (marshes-swamps)
110501	WETLANDS - UNDRAINED AND BRACKISH MARSHES
110502	WETLANDS - DRAINED MARSHES
110503	WETLANDS - RAISED BOGS
110600	WATERS
110601	WATERS - LAKES
110602	WATERS - SHALLOW SALTWATERS
110603	WATERS - GROUND WATERS
110604	WATERS - DRAINAGE WATERS
110605	WATERS - RIVERS
110606	WATERS - DITCHES AND CANALS
110607	WATERS - OPEN SEA (> 6m)
110700	ANIMALS
110701	ANIMALS - TERMITES
110702	ANIMALS - MAMMALS
110800	VOLCANOES
110900	NEAR-SURFACE DEPOSITS